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MOTOR AGE

A Prank of Old Dame Nature, seen in South

The South Seen Through Goggles

PART I

By H. G. Woodward

SO many people have asked me about touring in the south, as they put the question, that I have looked into some statistics in order to fortify my usual answer of, "stay in the north or middle west unless you are prepared to encounter poor roads, poor accommodations and probably considerable discomfort of mind and body in order to see the country, although talking over the experience afterwards will be a pleasure."

If you want to tour in the south—not to rush through to show what your car can do or to make a record, but to see the country—and are willing to travel something under 100 miles per day on an average, you probably will feel repaid for your trip. If you stop to look you will see manners, customs, ways of living, homes, and many other things differing considerably from those to which you are accustomed. The south is somewhat indefinite and even when defined as covering the thirteen states of Maryland, Virginia, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana and Texas, which have a combined land area of 753,940 square miles, is a question of some magnitude, as these states extend approximately 1,050 miles north and south and more than 1,700 miles east and west or almost from ocean to ocean.

They present a wide range of topography, geology and physical geography, from high mountains to saltwater marshes, from the much disturbed igneous rocks of the Appalachian backbone of the continent to the silts of the gulf and the coral reefs of Florida; with climatic conditions covering a good part of the possible variations in winds, temperature, humidity and precipitation.

All but two of these states are larger than the largest New England state, and the average size of the thirteen is only less by the size of one good county than the whole of the New England states, and over four and one-half as large as New York, New Jersey, Pennsylvania, Delaware and the New England states combined.

No one can well have any considerable motoring experience over the entire area, and my own experience over the roads is confined to Kentucky, Tennessee and Alabama, but observations while traveling by rail and water let me know that the remarks applying to these states have quite a wide application in the south.

A Kentucky pike built of flat stones with heavy stones on the sides for curbs. Rough but never muddy

The wealth, number and character of the population in any section has a direct bearing on the conditions of touring. This is especially true in regard to the roads, hotel accommodations and facilities for obtaining supplies and repairs for the car. The table given below shows the relative wealth of the people, the density of population and the proportion of whites to negroes in different parts of the country. A study of this table will bring out the reasons for the poorer touring facilities offered by the south as a whole than are afforded by the more populous and prosperous northern states.

POPULATION AND ASSESSED VALUATION
From the Census of 1900

	Assessed per sq. mi.	Valuation per capita
New England	$213,113	$923
N. Y., N. J., Pa., Del.	150,212	953
Ohio, Ind., Ill., Mich., Wis., Minn., Iowa, Mo., Ark., Kan.	28,432	668
Southern states	18,092	406

POPULATION AND ASSESSED VALUATION
From the Census of 1900

	Population	
	Total per sq. mi.	per cent. negroes
New England	172.8	0.92
N. Y., N. J., Pa., Del.	152.6	6.11
Ohio, Ind., Ill., Mich., Wis., Minn., Iowa, Mo., Ark., Kan.	48.7	4.47
Southern states	41.7	37.30

The valuations per capita are misleading, as in the south they represent largely land values, hence the people are land poor and only have a small percentage of personal property, which is what furnishes comfort and luxuries.

Distribution of Wealth

The wealth of the north and the east is very largely from manufacturing, which is woefully absent in the south. Of the small plants, making high value finished products, common to nearly every New England towns and very numerous farther west, there are almost none, such manufacturing as there is in the south being almost exclusively confined to producing from the natural raw material to the maker of finished products. The wages distributed in the south are, then, those at the lowest rates and paid to the minimum number of workers in any line from nature to the finished product.

There are hundreds of small factories in New England distributing more wages monthly than the annual wage distribution to the entire population of southern towns of the same size.

A short study of the table will show clearly why the roads and accommodations are poor and scarce. The country is thinly populated, the people poor, hence there is not traffic enough to justify, or means to build, good roads and bridges, and there are not enough people traveling to demand or support good hotels. Conditions are changing rapidly, especially in certain localities, but it will be years before the general condition will approximate in safety and comfort to the motor tourist to those in even the poorest of the New England and middle western states.

Few people in the north realize that Texas, with 20.4 per cent negro population in 1900, has the lowest percentage of negroes of any state south of Virginia and Kentucky, which is nearly ten times as many as the highest percentage in New England — Rhode Island, 2.12 — while South Carolina and Mississippi have nearly twenty-eight times as many as Rhode Island. The negro adds little to the things conducing to the comfort and welfare of the motorist, so that the actual conditions are worse than would be indicated by comparison of the total population in south and north.

Comparing the states through which lies the principal part of one's way from Maine to Alabama, and adding Georgia, South Carolina and Florida as example of other southern states, the table on page 4 shows at a glance how the wealth, population and number of towns decrease, and how the negro population, which is a detriment to the advancement of the region except as the labor of their lands adds to its wealth.

A usual means of conveyance in the backwoods of Alabama in contrast with the author's Pierce-Arrow

A typical toll house on the Shelbyville pike in Tennessee noted by the tourists

With few towns to connect there can be but few roads, and only the principal ones of these are even passable for touring. With no need for them and no money to build with, there is no system of good cross and connecting highways.

In the south which I have seen, the tourist will find the roads poor except in sections of special wealth, unless the geological conditions are favorable to natural roads, when they may be good in dry weather; when nature is unfavorable the roads are correspondingly bad.

Good road sentiment is obtaining among all classes, bonds for road-making are being sold, and much, compared with what there is at present, is being done in the way of road and bridge improvement, but it will require months and years, and millions of dollars, before we have roads comparable with the state highway system of Massachusetts.

The roads are worked for the most part by the people living along them, the road tax being a few days' work each year, and not by regular road-makers. The work consists in cleaning out the ditches and throwing the worn-out material to the center, whence it washes back again, ready for the next time, and there is no permanent benefit. The newly worked road is usually a very soft and bad place for a car.

Even Mules Are Stuck

The clay road, when free from rocks, often is fine for some weeks of dry weather, but when wet becomes practically impassable for a motor car. I have seen two good mules unable to pull a light spring wagon and three passengers down a 5 per cent grade.

Of general road books and maps there is none; the demand would not justify the expense; the topographic sheets of the United States geological survey, covering parts of several of the states, are of some assistance as to grades and where there are roads, but one cannot depend upon being able to follow a route selected from the map. The sheets do, however, show where there are bridges or ferries over the larger streams. Signboards are conspicuous by their absence, and when one is discovered the finder is in luck if he can interpret and use the information.

Sometimes roads through timber lands are hard to follow owing to numerous side turnings where lumber or other material has been hauled; blazes on the trees may indicate the main road if one can interpret correctly. Tennessee and Alabama mark two classes of roads by two and three blazes. Stumps often are found in the woods roads and may be difficult to avoid, especially when a new turnout to avoid mud holes or gullies has been made.

Cattle and hogs are likely to be found in the road at all times, and some caution is required, as they are slow in moving; more particularly at night is one apt to see cattle lying in the road in front of houses, as the roads is used for the farm yard and the cows are milked and left there. Wagons and other implements also are stored in the road and may leave only a narrow passage.

On the limestone pikes of Kentucky and Tennessee one need not fear traveling at any time, so far as mud is concerned, as the roads are hard, but may be somewhat rough from loose stones.

There is no continuous line of either hard surface or good roads between the Ohio and Tennessee rivers. From Cincinnati there is hard road to Louisville, via either Georgetown or Lexington. But from there to the Tennessee line is considerable road that would be very bad if not impassable in wet weather, and much of the remainder is rough in any weather.

With the exception of 10 to 20 miles, hard road, most of it good, will be found across Tennessee. South of Tennessee there are good roads only in certain counties, and these only the few main roads.

One of the best preserved sections of the old pike in Tennessee was flat limestone set on edge with an outer course of curb of heavier stones; the whole well raised to provide drainage, and it is a lasting but very rough road. It is said the stones are 12 and 15 inches in depth. Along these roads it is much safer to keep the rough pike than to take the short pieces of dirt road at the sides, which, while they may be smooth and inviting, where they leave the pike may be rough with big boulders, and present a difficult and dangerous passage back to the pike at the other end.

Bridges over streams fordable under ordinary conditions are rare in the poorer counties and often lacking in the richer. When the streams are high, fording is

An old stone bridge over a Kentucky creek. The parapet on this side has been torn off.

One of the old plantation mansions on the Murfreesboro pike with its characteristic air of decay

impossible. Unless the water is clear and one can see a smooth, hard bottom, it never is safe to rush a ford. If the bottom is soft it may conceal bad rocks or ledges; if the water is muddy, there may be rocks or sunken timbers. The worst accident we have had was from hitting a sunken piece of timber in a muddy ford where the road on each side was good.

Crossing the Streams

The larger streams, where a bridge is too costly, usually have some kind of ferry, but most of them look rather scary to one accustomed to good boats. They may be only scows, consisting of sides with a bottom sloped to the top of the sides at the ends, without deck or landing aprons. They may be pushed with poles, rowed with crude oars hewn from saplings, pulled by ropes, or towed by a small motor boat. I never have seen one operated under its own power.

The Tennessee river presents a problem in wet weather or when the river has been high and receded. The ferry landing and roads up the bank are clay, and when wet from rain, or worse, when soaked by high water and covered with the deposited silt, are something to be feared. At Fort Deposit ferry, after high water, it requires a yoke of oxen, block and tackle, seven men pushing, and the motor; chains on wheels to get us up the bank after the mud has been cross laid with poles for a few feet next to the boat. The rear wheels pushed the poles down so that those in front and behind were level with the hubs, and the running boards were on the mud and assisting to hold up the car.

WEALTH AND POPULATION OF NORTHERN AND SOUTHERN STATES

States—	Area land sq. mi.	Valuation assessed sq. mi.	Population Total sq. mi.	Population white sq. mi.	Negroes per cent.	Wealth per capita
Maine	29,895	14,063	23.2	23.14	0.19	$ 605
Maine towns	.....	.....	.....	.....	.....	.....
Massachusetts	8,040	568,905	348.8	346.21	1.13	1,630
Masaschusetts towns	.....	.....	.....	.....	.....	.....
New York	47,620	192,629	152.7	150.3	1.6	1,530
Ohio	40,760	57,703	101.9	99.8	2.3	565
Kentucky	40,000	19,100	53.6	46.5	28.4	355
Tennessee	41,750	10,634	48.3	36.9	48.	219
Alabama	51,540	9,060	35.4	19.4	45.2	255
Georgia	58,980	11,965	37.5	20.0	42.1	318
South Carolina	30,170	8,981	44.8	18.5	58.4	202
Florida	54,240	2,931	9.7	5.5	43.7	301

Typical bit of southern road that was traversed by the tourist in the Pierce-Arrow

Bridges Are Few

The only bridge for teams across the Tennessee river in Alabama is at Florence, which can be reached from Columbia, Tenn., over a clay road that is rough and next to impassable when wet. After reaching Florence, the roads south are all rough and hilly.

At one place there was a sudden dip in the level road and our lights showed a narrow cut and the road disappeared under water and a lot of logs. Getting out to investigate, we found a ford which seemed impassable from drift. While trying to back up the bank, a farmer living in a nearby house came up and told us that the ford was little used, and that by turning to the left at top of bank we would find a new bridge. Most people got caught the same way at night, he said. He thought there ought to be a signboard, with which we agreed.

At night one must keep a sharp lookout for toll gates, as the pole may be tied down. There is no light and to hit at speed would almost surely be disastrous. On one stretch we passed nine toll gates with a charge of 15 cents at eight of

Farm home in Alabama. The stable has been used for several years in the condition shown

NUMBER OF TOWNS IN A RADIUS OF 17.8 MILES

State—	500 to 1,000	1,000 to 5,000	5,000 to 10,000	10,000 to 50,000	Average white population
Maine	1.23	0.70	0.30	0.13	23,140
Massachusetts	13.25	3.87	.75	2.25	346,210
New York	8.55	3.69	0.70	0.45	150,300
Ohio	8.50	3.30	0.95	0.40	99,800
Kentucky	2.62	0.75	0.25	0.07	46,500
Tennessee	1.40	1.02	0.07	0.05	36,900
Alabama	1.72	0.72	0.09	0.06	19,400
Georgia	1.93	0.64	0.18	0.06	20,000
South Carolina	1.86	1.00	0.06	0.06	18,500
Florida	0.63	0.46	0.00	0.07	5,500

them. Beyond Walton, Ky., we passed six toll gates, having paid in all 81 cents.

Touring Conditions in South

From the middle of September to the middle of November probably is the safest time for touring, the rainfall averaging light though it often is dry to the middle of December. September is apt to be one of the hottest months. We were warned that the people would shoot first and talk afterwards, and that the toll-keepers would charge all kinds of prices; but we never have had trouble with any of the people and do not believe anyone who uses the road in a reasonable manner will have trouble.

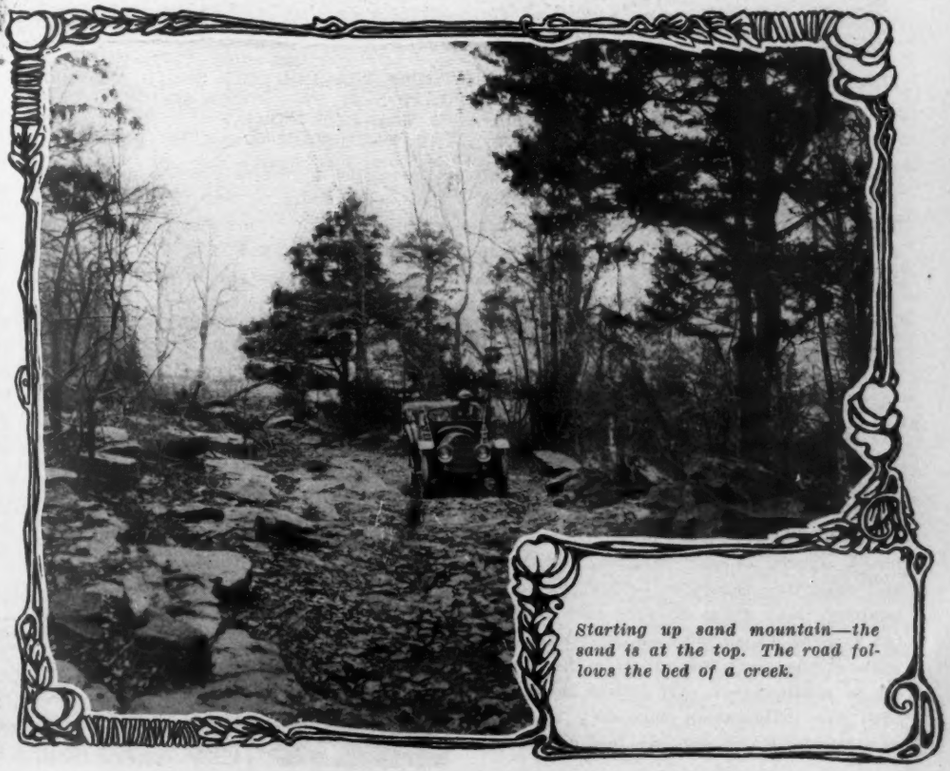
The southerners are quick-tempered and, like other country people, feel at first that the motor car is an invader of their rights on the roads, as nothing but horse-drawn vehicles previously have used them. So when their horses scare they naturally are resentful, but if the toruist keeps his temper, remembering that the people are slow movers, and govern his car accordingly, there will be no clash.

A touring party including women will be less apt to have trouble and will receive more favors than a party of men only. The southerner will not use abusive language in the presence of women, will treat them with unusual courtesy and give them any assistance he can, hence the woman's party will have an advantage both on and off the road.

In meeting or passing teams or "critter back" riders, it is best to always go slowly. The drivers are slow in movements of body and mind, and at the sound of a horn turn and look first, then very deliberately pull out at a small angle, so it is some time before the rear end of a wagon is clear. When the road cannot be seen ahead it is better to run slowly, prepared to stop easily in the distance that can be seen. Should you happen to meet a team, it is almost sure that you will have to do all that is done to avoid an accident, for the driver will stop and stare at you first and think about moving afterwards.

Coming up a very steep grade into a little cut, a very quick stop was required to keep from hitting a buggy which had stopped just below the crown of a hill, directly in the middle of the road. There was plenty of room to pass had the team been at one side, but the farmer, especially in the south, is nearly always sure to stop in the middle of the road first and get slowly out of the way afterwards—hence a car should be under good control when meeting or passing.

Some excitement was introduced by what might have been a bad accident. Coming up behind a buggy, the horn was blown several times. No attention being paid, we drew closer and blew some more; then an old man tried to get out in a



Starting up sand mountain—the sand is at the top. The road follows the bed of a creek.

THE ROUTE OF ONE OF H. G. WOODWARD'S TOURS THROUGH THE SOUTH. CROSSES INDICATE NIGHT STOPS. THE CONDITION OF THE ROADS MAY BE GAUGED BY THE DISTANCE TRAVERSED DAILY A PIERCE-ARROW CAR WAS USED

hurry, fell between the wheels, holding the lines, and scared the horse by his yells. The horse ran and was stopped by a farmer and led into a field. We took the old man aboard and carried him to the horse, which did not seem scared. We were pleased to find that the old man did not blame us.

The motor car often attracted a curious crowd which could and would not keep its hands off the car—one ignoramus left his name and the date on a fender written in the dust, as he thought, but really in the varnish.

Habits of the People

The people are nearly always kindly disposed, agreeable and obliging, optimistic and expecting things to be better; which qualities lead them to give the inquirer the kind of information he desires to have without the giver intending in the slightest to misrepresent. Of course they only can give information according to their own standards; if you are told a place is a good one at which to stop over night, they so consider it, but you may be disappointed. Their information as to the passability of a road is of little value, as they do not know the possibilities of a motor car, and are telling you what they guess, which usually is wrong, except as to stumps in the road or mud. If they tell you it is very muddy, you had better go some other way if you can, for they know mud.

The use of superlatives is so common that when one wishes to be impressive he must use plain language. Even in business transactions the southerner is likely to use superlative or exaggerated language which the unaccustomed mind does not gauge correctly.

The relative opportunities the tourist has of obtaining assistance in case of trouble, or of receiving hotel accommodations, depend on the population, but the tourist must remember that the negro in the south can give him little or no assistance, except in manual labor; that the whites are sadly lacking in mechanical knowledge; and that machine shops and mechanics are present in much fewer numbers than in any equal white population in the north.

In looking up population of towns, as a guide to stopping places, remember that on the average about half are negroes and that the remaining half will not in general afford accommodation and assistance equivalent to half its numbers in the north, or in other words a town given as 500 population will be less acceptable and useful to the tourist than one of 100 population in New England.

When an accident occurs or night overtakes the traveler he is within a radius of 17.8 miles of towns, white people, as indicated in table on page 5.

Of course the real number of people in the average 1,000 square miles in the country is very much fewer than shown in the table on page 5, as the people are segregated in the cities, but the relations are indicative.

Southerners Are Hospitable

Most people living along the road would be willing and glad to take you in over night in case of need, and would give you the best they had, which in many cases would seem poor enough to one accustomed to good living. You might have to sleep in a room with two to four other people, and in a few instances might even find the bed with numerous other inhabitants, but the people would do all they could for you. They naturally are kind, and want company, but back of this probably is the inherent feeling of any sparsely settled country, that they may need assistance themselves at any time.

In the cities of the south the hotels the just as well-appointed and well managed as any of those in the north. Such places as Louisville, Frankfort, Nashville, Atlanta, Savannah, Birmingham—in fact, all of the larger centers—are blessed with hotel accommodations that will meet the requirements of the most fastidious tourist. The city hotels are large and the cuisine and service is all that could be desired. There is just enough of the southern cooking to please the visitor from the north.

(To be Continued.)

Show at Winnipeg Arouses Canadians

Motor Car Display at Industrial Exposition Attracting More Attention Than Any Other Department

WINNIPEG, July 16.—For the first time in the history of the Winnipeg industrial exhibition a full-fledged motor car show is included in the list of attractions. Two months ago the management conceived the idea of adding this feature and publicly announced its intention of doing so. Within less than 3 weeks the original allotment of space for the purpose had been over-subscribed and the directors concluded that an entire section would be turned over to the motor car and kindred industries. Three weeks before the show opened even this added accommodation was deemed insufficient, and an additional structure of 10,000 square feet floor space was hastily constructed.

With the opening of the show by the lieutenant-governor last week it was discovered that the motor section held greater interest for fair patrons than any other section of the exhibition. Within the space dedicated to this industry more than fifty agents had crowded exhibits of close upon eighty makes of cars as well as a dozen different exhibits of accessories in supply dealers. From the first official wheel of the gate turnstiles until the close of the first week the manufacturers' building containing the motor show has been the central attraction of the visiting thousands.

Show Attracts Outsiders

The manufacturers who are exhibiting their wares through local agents have done so with a dual purpose. The annual Winnipeg exhibition is the market place of western Canada. In addition to gathering almost the entire population of the city within the confines of the grounds, there is an influx of the most prosperous residents of all parts of the west within 1,000 miles. The moneyed farmers come to show and inspect the finest live stock and ground products, while the dwellers of the smaller towns and cities look upon fair week as the most advantageous time of the year in which to see the city. It is estimated that the fair draws from 60,000 to 80,000 provincial visitors. The value of this medium of attraction as a means of advertising motor cars has been grasped with avidity by manufacturers from all parts of the United States and from the few Canadian centers. Not only are prospective purchasers, who have the money to buy, being enlisted by the scores, but outside agents for the varied makes of machines are being appointed for almost all points in the west where representation has not already been secured.

The exhibits of cars are representative of manufacturers from all ends of the United States and Canada. Prominent among the exhibits are: Chalmers cars; five models and a stripped chassis with cut out sections which is driven by motor power so the uninitiated may intelligently follow the entire cycle of operations of the motor and transmission. The exhibit is in charge of the Manitoba agent—the T. Eaton Co., Limited.

The National and Mitchel lines are exhibited by A. C. McRae. The display of trophies won by the National racing team on hill and track is a feature.

The Overland and Packard are being displayed by the Western Canada Motor Car Co. The Packard is shown only in the 30-horsepower seven-passenger type, but a complete line of the Overlands are in the booth.

The Hupp-Yeats electric, the Inter-State 50, and a McFarlan six-cylinder are shown by the Breen Motor Co.

The Halladay Auto Co., Limited, was able to get only two models here in time for exhibition purposes, and as a result but a pair of 40's are shown: one in a roadster, the other in a touring car.

Hudsons occupy a large booth conducted by Robert Muir & Co. With the Hudsons are shown a complete line of Firestone tires, as well as numerous motor accessories.

The Columbia, Maxwell and Paterson are exhibited by the Walker Motor Co. The Columbia shown is a seven-passenger. The Maxwell is a five-passenger 30-horsepower touring car, and the two Paterson cars are of the same power, one a roadster, and the other a touring car.

The Everitt is shown in four different models by the Tudhope-Anderson Co., Limited, including a fore-door standard touring, demi-tonneau and roadster.

Northern Motors, Limited, shows four Paige-Detroits, one Henry and one Marathon. These include two roadster models, one fore-door touring car and a detachable tonneau surrey, all having four-cylinder 25-horsepower motors.

Two fore-door touring cars and a delivery van chassis are shown by the White Co. through its local agent, F. Lion.

The Warren-Detroit Exhibit

Four models of the Warren-Detroit factory products are shown by the American Abell Co., which is the western Canada distributor for this car. From the roadster to the commercal van the exhibit is complete.

The display of the Brush lines is in the hands of the Commercial Motor Car and Truck Co. The little chassis is fitted with every conceivable type of body, including the 1-ton truck. A 20-horsepower Gopher truck, with stake body and double chain drive is also exploited.

The Detroit electric in two designs—one a man's roadster and the other a coupe, are shown by the Laramer Co., a new firm in local circles.

The Waverley electric agency was secured so recently by the T. Eaton Co. that its models were late in arriving, and will not be in position until the second week of the show.

Ford at the Show

The Ford Motor Co. has two roadsters and a touring car, in addition to a stripped chassis with cut-out sections, which render the motor action capable of more ready explanation by the demonstrators.

Canadian Agencies, Limited, is showing the Shacht lines, in addition to Detroit and Wagner motor cycles, motor boats and accessories.

The Goodyear Tire and Rubber Co. is showing a full line of tires and rubber goods for the motor owner.

The Reynolds Motor Co. of Detroit is showing its four-cylinder engines, with rotary valves, in operation.

The Carbon Oil Co., Limited, exhibits a full line of ignition specialties, including dry cells, storage batteries, flashlights, volt and ammeters. All these batteries and appliances are made in Winnipeg.

The Triple Tread Co. exhibits the triple tread casings which are made from chrome leather with inserted steel studs around the tread. This is another made-in-Winnipeg exhibit.

The Western Rubber and Supply Co. is exhibiting Fisk tires in all varieties, from light motor cycle to heavy truck lines.

The Sterling Supply Co. is showing Maher duplex multi-spark plugs and Universal steel-studded detachable tire casings.

The Canadian Consolidated Rubber Co. is showing a complete line of Canadian tires, including the new non-skid pattern, designed to eliminate chain grips.

The Canadian Fairbanks Co. displays a complete line of electrical and motor accessories, in addition to motor boats and marine engines.

P. C. Hagerty & Co. show the Michelin tires and a line of accessories.

The Dunlop Tire and Rubber Goods Co. exhibits rubber goods of every conceivable type for motor and motorist.

Republic tires with the staggard tread are shown by the Auto Tire and Vulcanizing Co.

Accessories are shown by the Consolidated Bicycle and Motor Co., along with Indian, Excelsior and Pope motor cycles.

With the show only well started the exhibitors are already clubbing together to arrange for the big midwinter show, which will be held next February, and which will occupy close upon 100,000 square feet of floor space. The current show occupies 40,000 feet and much more could be used if available.

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A Good Antipathy Lesson

BAR HARBOR, Me., has by experience learned what it costs to antagonize a modern system of transportation. Two years ago the taxpayers in this exclusive Atlantic seaboard resort did not want the motor car; according to them their streets were only for horse-drawn vehicles and pedestrians who wanted to use them; they had no sympathy with the modern system of transportation by motor car; they determined to place a barrier around themselves and exclude the car; they went to the legislature to do this and they succeeded; jubilations followed their success. Now they are in sack cloth and ashes. They are in the repentant stage. They are repenting because the exclusion of the motor car has touched their pocketbooks; it has touched their businesses; it has touched their social life; it has touched the general success of the place.

THE citizens of this specially exclusive center now would like to have the motor car summer tourists visit their resort and spend their time and money there. They have found out that where the motor car goes, business goes; they have found out that exiling the motor car means loss of business because a person once accustomed to using a car will not return to horse traffic simply to spend a few weeks or months at a certain New England resort. Hundreds of motorists would sooner drop the most desired summer resort if they could not go there with their cars, preferring to live at other places, where the car is permissible on all the streets and drives.

WHAT has been done at Bar Harbor and the results following same will serve as a lesson to every summer resort, to every town and every village in the country, because what the motorists will do in Maine they will do in California or Illinois. Many small places have shown more or less antipathy to the car and it is practically a certainty that in every place where this has been done the town or village itself has been the loser. It is just as senseless for a municipality to bar a motor car as it is to bar the steam railroad or the line of steamboats that may call. The motor car is an acknowledged method of transportation for vacation; and for touring purposes it is more than doubling its popularity every year, and the sooner all sections of the country devoted to holidaying purposes realize this the better. It is a pure business proposition. Instead of barring cars from their streets, these municipalities should work to improve their streets and make them more satisfactory for motor traffic. It will pay them in dollars and cents each year to work such improvements, because the better the thoroughfares the greater the motor traffic, and the more money is left in these centers. Instead of antagonism should be the spirit of invitation.

BARRING motor cars from certain city or town driveways and parks is a roundabout method of trying to accomplish an end. Where they have been barred from such places it has been that it was on the pretense of protecting the women and children and horse traffic of the summer visitors at these points. What is the result? These same summer visitors, who 2 years ago were opposed to the motor car, largely through ignorance in the majority of cases, have now been made converts to this new method of transportation, and instead of wanting to bar the car, as they did 2 years ago, they now want to use it; and, as in the example cited above, where they are prohibited from using it, they are actually to spend their summers at places where its use is prohibited. This should serve as a pertinent example to every other municipality in America. It should answer for all times the question that good roads and motorists constitute an asset to any municipality. Through this example the local inhabitants will learn that it is worth while to improve the roads, and that while the improvement seems solely for the benefit of the motorist, it almost invariably results in a financial gain to themselves. That municipality is to be pitied which refuses to improve its highways solely because it thinks it will not be able to control the speed of motorists on the improved roads. This is the greatest acknowledgment of weakness any municipality could possibly make. It is a prima facie acknowledgment that such municipality is not breathing the breath of twentieth century progress; in a word, it is an unwritten verdict that the controlling spirit of the municipality is lagging behind the spirit of the times.

For Whom Do You Build?

TWO or 3 years ago many of the motor car manufacturers set out to build a certain type of car. One manufacturer aimed to build a speedy vehicle; a racy-looking product; a car that would appeal to the sporting class—that is, those desiring a more powerful car and a faster car than their rivals, a car that could pass all others on the country roads. There was another class of manufacturers, those makers who set out to develop touring cars, cars adapted for rational use; cars in which the owners with their families can average 20 miles an hour from sunrise to sunset over the country roads; cars which are admirably suited for city use; cars that were never intended to be racers. What has been the result? Some of the manufacturers building the first type of car have discovered that they have built for a class that rarely buys a second car of the same make. The buyers say the car is expensive to operate. They say it costs two, three or four times as much for replacements and spare parts as the more rational touring car, and that while this class of so-called sports was enthusiastic over the car for its speed qualities, their enthusiasm waned when the expense bills came in.

THE car was not to blame. The speedy car was a good car. Its materials were the best. Nothing better in the nature of design could be asked for. The factory workmanship was equal to that of any other maker in the country. Then, why the expense? The car was too powerful and too speedy for the driver. The driver abused it, because of the extra power placed in his hands. The case was comparable to placing a blooded race horse in the hands of a man accustomed to driving a team of dray horses. The blooded horse is a sensitive creature, requiring the greatest care and treatment in every respect. So with the fast car. The high-speed motor must be carefully handled. Racing cars are much more delicate to adjust than the heavy commercial truck. They are harder to keep in adjustment, and they are much easier to abuse. This is why the speedy car has been such an expense with many owners. The fault has not been with the car but with the owner. This same owner has in not a few cases turned against the car and criticized it when the criticism should have been placed upon himself.

Bar Harbor Regrets Its Motorphobia

BAR HARBOR, Me., July 15.—That a mistake was made in barring motor cars from Bar Harbor is the opinion now of some of the business men of the famous Maine summer resort. And they are ready to admit it. Even now, when the bitter fight of a couple of years ago is still vividly remembered, there are those who have experienced a change of heart and would have wished the result of excluding the motor cars had been decidedly adverse. Bar Harbor depends upon summer visitors for its sustenance, because there are not any manufacturers, and the little bit of fishing done by the regular residents amounts to naught. And summer visitors have not been plentiful this year. Nor were they last year. A few years before motor cars became so popular the driving over to Bar Harbor in carriages by many people threw hundreds of people into the summer colony every day. Then the advent of the motor car seemed about to add to the invasion, and the fight for exclusion began.

It was a bitter one and did not end when the legislature passed a law allowing the roads to be closed, for the advocates of open roads took advantage of the Maine referendum law and tried to abrogate it. But it failed, and so Bar Harbor was left motorless, and likewise more exclusive than ever. So motorists turned to other places, as Maine had many seashore resorts and the motor cars could carry merry parties there. Then the usual improvements had to be made in the town, and when it came to making them the tax levy had to be raised a bit. But when the business men began to balance accounts they found that the revenue was not coming in as well as in other years. In other words, there was a lack of business, and so, when the men found their pocketbooks being touched, they sat up and took notice. They asked themselves why such a thing happened, and by putting two and two together they reasoned out the advent of the motor car meant a decline of carriage vehicles, for no motorist would leave his car outside a village and hire a horse and carriage even to inspect Bar Harbor.

Here, then, was the rub. So some means was looked to for relief. There has been some agitation now for a special road allowing motor cars to come to the island, but this has not materialized. And all the while the days go on and the wares remain in the stores unsold. The summer season is not half over yet, and with about fifty cottages that are usually let still remaining idle, and others that are occupied by owners not being used, the summer population has been depleted by several hundred who usually spend the summer on the island. This, added to the loss from the transients, makes it all the harder.

So the business men of Bar Harbor have at last awakened to the fact that they really made a mistake in having the legislature pass an exclusion law. They would like to see the smiling motorists with their cash come to the island these days, but they have put up the barriers. Meanwhile they hear of what a fine season it is at other shore resorts, where landlords are extending the welcome hand to motorists and reaping a harvest from the people who motor from place to place. So when the Maine legislature meets again there may be some effort made to change the present state of affairs.

Coming Motor Events

July 4-20—Prince Henry tour, Germany.

*July 17-22—Milwaukee reliability run, Wisconsin State Automobile Association.

*July 20-28—Minneapolis reliability run to Helena, Mont., Minnesota State Automobile Association.

July 23—French grand prix road races.

July 29—Hill-climb at Cincinnati, O.

*August 4-5—Brighton Beach 24-hour race, E. A. Moross, promoter.

*August 3-4-5—Galveston beach races, Galveston Automobile Club.

*August 7—Reliability for trucks, Chicago Evening American.

August 10-12-13—Races on Gearhart beach, Portland Automobile Club, Portland, Ore.

August 12—Worcester hill-climb, Worcester Auto Club.

August 12—Reliability run of Quaker City Motor Club, Philadelphia.

August 17—St. Louis reliability run, Missouri Automobile Association.

*August 25-26—Elgin road races, Chicago Motor Club.

September 1—Oklahoma reliability run, Daily Oklahoman.

September 2-4—Brighton Beach races, New York.

September 7-8—Philadelphia track meet, Philadelphia Automobile Trade Association.

September 7-8-9—Track meet, Minnesota State Automobile Association, Hamline track, Minnesota.

September 7-10—Reliability run of Buffalo Automobile Club.

September 12-13—Track meet, State Automobile Association, Grand Rapids, Mich.

September 15—Track meet, Appalachian exposition, Knoxville, Tenn.

September 16—Track meet, Automobile Club and Dealers, Syracuse, N. Y.

September 18-20—Reliability run for trucks of Chicago Motor Club, Chicago.

October 3-7—Track meet, Danbury, Conn., Agricultural Society.

October 7—Fairmount Park road race, Philadelphia.

October 9-13—1,000-mile reliability, Chicago Motor Club.

October 16-18—Reliability run of Harrisburg Motor Club.

November 1—Track meet of Waco Automobile Club, Waco, Tex.

November 2-3-4—Reliability run of Quaker City Motor Club, Philadelphia.

November 9-11—Track meet, San Antonio Automobile Club.

November 4-6—Phoenix road race, Maricopa Automobile Club.

November 9—Track meet of Maricopa Automobile Club, Phoenix, Ariz.

November 27—Vanderbilt road race, Savannah, Ga.

November 30—Grand prix race, Savannah, Ga.

November 30-December 2-3—Los Angeles motordrome.

December 25-26—Los Angeles motordrome meet.

January 6-20—Madison Square Garden show, New York City, Automobile Board of Trade.

March 13-20—Show of Boston Commercial Motor Vehicle Dealers' Association, Mechanics' building, Boston.

January 1-7—Grand Central palace show of Automobile Manufacturers of America, New York City.

January 10-17—N. A. A. M. show in Grand Central Palace, New York.

*Sanction already issued

GRAND PRIX NEXT SUNDAY

Paris, July 5—In consequence of the success of the light-car race at Boulogne, the organizers of the grand prix de France, to be run near Le Mans on Sunday, July 23, have decided to create a special class for this type of car. Instead of compelling the competitors to fit a body having minimum dimensions, and to carry mudguards and running boards, absolute liberty will be granted in this respect.

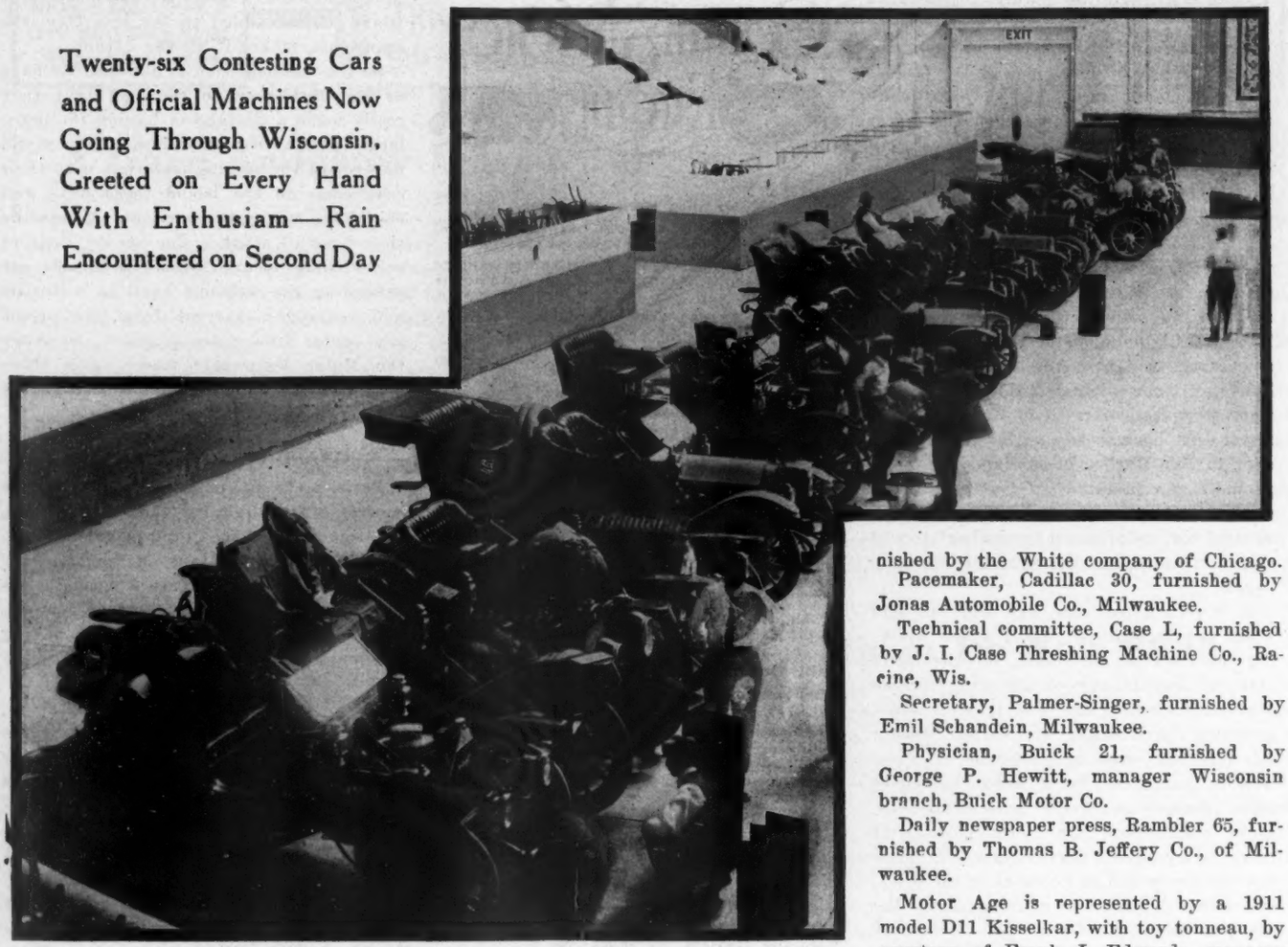
The Sarthe race will now comprise three classes: cars having a four-cylinder motor of not more than 110 by 200 millimeters bore and stroke; light cars having a cylinder area limited to 3 liters, with a minimum weight of 1,763 pounds; and cars without any limitation of power and weight.

At the present time the entries are two Dietrich and three Rolland-Pilian cars in the 110 by 200-millimeter class; two Dietrichs, three Lion-Peugeots, one Ford and one Porthos in the unlimited power class; three two-cycle Cote cars and one Mathis in the light-car section. It is confidently expected that this latter class will be reinforced by entries from Aleyon, Koecklin, Sizaire-Naudin, Vauxhall and Excelsior factories, all these having prepared for the Boulogne event but being prevented from showing their full value by reason of hasty preparation.

The course is roughly an equilateral triangle with a smooth level surface and very few bends. It is doubtless one of the fastest to be found in France. Everything necessary is being done to assure safety, the Sarthe Automobile Club having secured the services of 1,100 soldiers and 400 gendarmes, and having erected about 1,600 yards of stout barriers in the more dangerous positions. The grand stands are being erected at the Le Mans end of the course, about 2 miles from the center of the town.

Badgers on Their Annual State Tour

Twenty-six Contesting Cars and Official Machines Now Going Through Wisconsin, Greeted on Every Hand With Enthusiam—Rain Encountered on Second Day



CARS UNDERGOING TECHNICAL EXAMINATION AT MILWAUKEE

MILWAUKEE, WIS., July 17—Eighteen contesting cars and eight official cars started the 1,000-mile grind which is to constitute the route for the second annual Wisconsin reliability tour under the auspices of the Wisconsin State Automobile Association at the Hotel Pfister this morning, the first car, August Jonas, No. 1 Cadillac, crossing the starting line at 6.

These cars are competing for three trophies, the Milwaukee Sentinel sweepstakes cup, for possession for 1 year by the winning car; the Milwaukee Journal cup for permanent possession by the winning touring car; the Evening Wisconsin trophy for permanent possession by the winning roadster or runabout. Emil Hokanson, whose model 19 Buick made the only perfect score in the first annual run, July 18 to 23, 1910, and won the Sentinel cup, is defending the trophy in a model 39 Buick this year.

There are three entries in the private owners' division for the Emil Schandein cup, donated by a wealthy Milwaukee motorist and good roads enthusiast. They are: Kisselkar roadster, Mort I Stevens, Milwaukee; Auburn touring car, C. Hucksdorf, Milwaukee, and a model D Franklin touring car, J. B. Babcock, Milwaukee. Brad Kent, of Kenosha, could not start his Marquette-Buick this morning.

Babcock, who is secretary and treasurer of the Auto Supply Co., Milwaukee, is entered in both professional and amateur divisions and stands to win three cups. His Franklin is No. 13 in the trade division and No. 103 in the private owners' tour.

Of the sixteen cars in the trade division, nine are roadsters or runabouts and the remainder touring cars. This fact alone is responsible for a considerable decrease in the total number of persons participating in the tour, and it is expected that the hotels in the various towns where night controls have been established will this year have no difficulty in handling the crowd of tourists.

All of the official cars are touring cars or toy tonneaux, and include the following:

Pilot, Overland 53, furnished by George W. Browne, factory representative for Wisconsin, Milwaukee.

Confetti car, White 30, which is furnished by the White company of Chicago.

Pacemaker, Cadillac 30, furnished by Jonas Automobile Co., Milwaukee.

Technical committee, Case L, furnished by J. I. Case Threshing Machine Co., Racine, Wis.

Secretary, Palmer-Singer, furnished by Emil Schandein, Milwaukee.

Physician, Buick 21, furnished by George P. Hewitt, manager Wisconsin branch, Buick Motor Co.

Daily newspaper press, Rambler 65, furnished by Thomas B. Jeffery Co., of Milwaukee.

Motor Age is represented by a 1911 model D11 Kisselkar, with toy tonneau, by courtesy of Frank J. Edwards, manager of the Kisselkar Co., of Milwaukee. The big car, while not a contestant, is running under the same conditions and rules as the actual contestants by choice of Mr. Edwards and will be awarded a diploma by the W. S. A. A. upon its performance.

Judge Michael S. Sheridan, of the county court, Milwaukee, is referee of the tour. Matthew C. Moore, president of the state association, is pilot. He acted as pathfinder over the route last fall and in the spring. James T. Drought, secretary, is taking care of the secretarial duties and is assisted by Emil Schandein and R. C. Corbitt. P. C. Avery, of Milwaukee, is starter, and John W. Kemp, of Sparta, is handling the assistant pilot and confetti car. The chief observer is H. L. Halverson, of Whitewater; chief checker, A. P. Cheek, Baraboo; official physician, Dr. Louis Fuldner, Milwaukee; assistant, Dr. Frank H. Hagermann, Milwaukee.

Mr. Fischedick is chairman of the technical committee and is assisted by Messrs. Tufts, Prinz, F. L. Clark and Louis T. Hill. F. E. Edwards, of the A. A. A., is supervising the technical work.

The tour is being conducted under grade I of the A. A. A. contest rules, the private

owners' tour being under grade III rules. All of the cars were parked in the Auditorium at Milwaukee from noon on Saturday, July 17, and will be returned to that place after the finish for the final examination, after the brake, motor and clutch tests have been completed on nearby streets and hills.

President Moore has chosen one of the most interesting routes of any reliability tour in the middle west this year. It covers only 15.5 miles less than an even 1,000 miles and is divided into 6 running days, as follows:

First day—Milwaukee to Marinette via Port Washington, Sheboygan, Manitowoc, Two Rivers, Green Bay, Oconto, Peshtigo; 190.3 miles.

Second day—Marinette to Wausau via Shawano, Oconto Falls, Gillette, Mattoon, Antigo, Merrill; 171.5 miles.

Third day—Wausau to La Crosse via Stevens Point, Grand Rapids, Marshfield, Neillsville, Black River Falls, Sparta and West Salem; 203.0 miles.

Fourth day—La Crosse to Lancaster via Viroqua, Viola, Richland Center, Blue River and Fennimore; 128.5 miles.

Fifth day—Lancaster to Janesville via Platteville, Darlington, Mineral Point, Barneveld, Blue Mounds, Mount Horeb, Verona, Madison, Stoughton, Edgerton; 159.6 miles.

Sixth day—Janesville to Milwaukee via Beloit, Delavan, Elkhorn, Burlington, Kenosha, Racine, Franksville; 122.7 miles.

The First Day's Run

Marinette, Wis., July 17—With a much longer daily average than in 1910 before them for the 6 days of the second annual reliability tour of the Wisconsin State A. A., the nineteen contestants got down to work at the very beginning today and proved the advisability of extending the daily and total schedules by making a fine run to Marinette, the Queen City of Wisconsin, home of millions, center of lumbering and acme of hospitality. The 190 3 run was made on an average of 7¼ hours and the cars breezed into the city as much alive as when they left the Hotel Pfister beginning at 6 o'clock this morning. On their arrival the cars were parked in Dunlap square and placed under guard.

It was one of the most beautiful runs those who are participating in this tour have ever experienced, despite the fact that some of the best and some of the poorest roads in the state were encountered. On the whole, however, the roads were good and showed the hand of the road builder. In many spots where improvement work was under way, and the going was rather difficult, the tourists smiled and took their medicine, for they knew that the hearts of the men who had made the stretches almost impassable were working to a good end—good roads.

A broken rear axle on one car was the worst result of the struggle over these roads. The Auburn, running in the private owners' division, struck a hidden hole 5 miles south of Green Bay and snapped the driving shaft in the axle. At a late hour the car had not checked in, but it is expected to show up in time for checking out tomorrow, according to telephone advices received from the owner, C. Hucksdorf, tonight.

Several other penalties were meted out, but none was of a serious nature, and one is regarded as rather too severe. J. B. Babcock's Franklin, which is running in both private and trade classes, failed to make the required 3-minute stop at Port Washington and was penalized 3 points. Mr. Babcock ran well above schedule all day and had no trouble whatever, and the failure to stop was not only an oversight but of absolutely no assistance to him in finishing the day's run under the time schedule. It is claimed several other cars failed to stop at that point.

The National was penalized 10 points for work on the rear axle. Driver Merz thought a nut was loose on the driving shaft housing and after tightening it found it too tight and was obliged to loosen it.

No. 16 Petrel got 13 points, 3 points for motor stop and 10 points for taking on water outside of control. Driver Mack believes that the fact that he carried the observer nominated by No. 13 and the penalty was 13 points formed a hoodoo combination.

Today's run was along the west shore of Lake Michigan, and the good old lake was kept in sight for the greater part of the time until the trail shot inland, only to reach a Lake Michigan bay at the day's finish line in Marinette.

Tonight there was a gala concert in the public square between the Hotel Marinette, official headquarters, and the parking place. The tourists retired rather earlier than was the rule during last year's run, for this time it is "early start" for all of them. The daily runs are long and no time can be lost in getting away.

The weather for the first day was ideal.

STANDING OF WISCONSIN STATE TOUR CONTESTANTS

	Name of car—	Bore	Stroke	model	Entrant	Driver	—Penalties— 1st day	2d day
1	Cadillac	4½	4½	30	Jonas Auto. Co.....	August A. Jones.	0	0
						Louis Fuhrmann.	0	0
2	Buick	4½	5	39	Hokanson Auto. Co..	Emil Hokanson...	0	0
3	Buick	4½	5	38	Geo. P. Hewitt.....	Geo. P. Hewitt...	0	0
4	Buick	4½	5	39	Buick Motor Co.....	D. Nicolozzo.....	0	0
5	Reo	4	4½	R	Curtis Auto. Co.....	A. J. March.....	0	0
6	Ford			T	Hickman-Lauson-Diener Co.	W. H. Diener.....	0	0
7	Imperial			43	LaCrosse Plow Co...	Herb. Crampton..	0	0
8	Imperial			44	LaCrosse Plow Co...	Harry Bisbee....	0	0
9	Krit			A	LaCrosse Plow Co...	W. G. Westwood.	0	0
10	Case	4¼	5	L	J. I. Case Co.....	William L. Jones.	0	0
11	National	5	5½	40	George Browne.....	Charley Merz.....	10	0
						Rich. B. Bates...	0	0
12	Overland	4¼	4½	53	Bates-Odenbrett Co..	John Heber.....	0	0
13	Franklin Six.	4	4	D	J. D. Babcock.....	J. D. Babcock....	3	0
14	Regal	3¾	4½	N	C. H. Delafield.....	C. H. Delafield...	0	17
15	Warren-Detroit			11-J	R. D. Rockstead.....	R. D. Rockstead..	0	12
16	Petrel			25	Petrel Motor Car Co.	J. J. Mack.....	13	0
	PRIVATE OWNERS' DIVISION—SCHANDEIN TROPHY							
101	KisselKar ...	4¼	4¼	LD11	Mort I. Stevens.....	Mort. I. Stevens.	0	0
102	Auburn				C. Hucksdorf.....	C. Hucksdorf.....		9
103	Franklin.....	(Same as No. 13)			J.D. Babcock.....	J. D. Babcock....	3	0

MOTOR AGE'S KISSELKAR PRESS CAR AND HOKANSON'S BUICK

It was cool and refreshing, a great relief after the hot spell the state has been sweltering under 2 or 3 weeks.

Rain Encountered Tuesday

Wausau, Wis., July 18—The second day of the second Wisconsin reliability tour started and ended with rain, and for the first time since the annual tours were inaugurated, the cars were obliged to brave rain and mud for during the entire 1910 tour not a drop fell while the contestants were on the road. Excellent time was made over the 171.5 mile drive from Marinette to this city, and most of the cars were checked in at the night control before 5 o'clock.

The rain was accompanied by a cool wave, which, while a relief from the torrid weather that has been the lot of the state for a long time, caught many of the participants unprepared, and they shivered in light raiment.

The start was made from Marinette at 7 o'clock this morning, all of the eighteen contestants being in the line-up for the word. The Auburn, running in the private class, came into Marinette at 4 o'clock this morning, after a hard run from Green Bay, where it was laid up with a broken shaft in the semi-floating rear axle, Monday afternoon. The break was mended in Green Bay, and the car is now running as usual.

There was a light rain at 5 o'clock this morning at Marinette, but it lasted only a quarter of an hour and was characterized by the tour officials as a "dose from Nature's sprinkling cart." The rain laid the dust to some extent, but the traces of it soon were lost.

At Antigo, a 1½-hour stop was made for luncheon and there was a citizens' demonstration. Three-minute stops were made at Peshtigo, Oconto Falls, Gillett, Lena, Shawano and Mattoon. Shawano and Antigo were also gas controls. Antigo is 118.1 miles from Marinette, but the tourists were all checked in before 1 o'clock.

Just before the run was resumed at Antigo, a drizzling rain set in and this continued unabated until the night control, Wausau, was reached. The roads are sandy, but the soaking given by the rain made the going good and while the average time was not up to that of the morning, everybody got in here in plenty of time. There were showers throughout the evening and the start tomorrow will be an early one, 6 o'clock, for the Wednesday run is the longest of all, 203 miles.

Wednesday's run is from Wausau to La Crosse, 203 miles; and on Thursday from La Crosse to Janesville, 128.5 miles. Friday will take the tourists from Lancaster to Janesville, 159.6 miles, and from that point to Milwaukee, 122.7 miles.

Tuesday's penalties were: Regal, 17 points, late at control; Warren, 12 points, throwing sand on slipping clutch; Auburn, 9 points, late at control. Auburn's Monday penalty for a broken axle has not yet been determined.

Fight Over Fairmount Park Road Race

PHILADELPHIA, Pa., July 13—Owing to Mayor Reyburn's antagonism to the Quaker City Motor Club and his announced dissatisfaction with the organization's management of the eastern classic last year, vigorous competition for the honor of conducting the fourth annual 200-mile Fairmount park road race has developed, and although the Quaker City Motor Club has been granted the requisite sanction from the American Automobile Association, the Philadelphia Automobile Trade Association put in a formal application to the Fairmount park commission at its monthly meeting yesterday for permission to hold the race.

Owing to the fact that the contest cannot be held without adequate police protection, which, of course, would not be granted the Quaker City Motor Club, in case the mayor should persist in his opposition to the club, the motoring fraternity is up in the air as to the ultimate outcome. Despite Mayor Reyburn's indorsement of the Philadelphia Automobile Trade Association, members of the Quaker City Motor Club feel sanguine and are confident that the misunderstanding engendered between the mayor and the club last year over the distribution of the receipts will be adjusted satisfactorily to their organization, the necessary police protection afforded and the event conducted as in the past. The Q. C. M. C. already is armed with a permit from the park commissioners, in addition to the official sanction of the A. A. A. Less than 3 months off, interest is already rife over the big event, and a final decision from the city's chief executive is eagerly awaited.

A more representative assemblage of the racing kings is promised this year than at any former race, all or a majority of the following noted drivers being expected to compete: Bruce-Brown, de Palma, Mulford, Aitken, Cobe, Endicott, Zengle, Dawson, Hardesty, Gilliard, Burman, Nazzaro, Mullen, Ringler, Tetzloff, Horan, Betz, Bergdoll and Haupt.

CHICAGO'S ORPHANS' DAY—CHILDREN EATING ICE CREAM CONES

CHICAGO'S ORPHANS' DAY—THE START FROM GRANT PARK

More Entries for Elgin Road Races

CHICAGO, July 16—With seventeen entries actually in for the American Automobile Association's national stock chassis road races on August 25-26, the Chicago Motor Club and the Elgin Automobile Road Race Association believe they will gather a field that will be larger than the one that went to the tape last year. It was only within the last few days that the makers awakened to the fact that the big races are close at hand and as a result five nominations were received Saturday while three more came in today.

Entries of four Nationals and a Corbin were received Saturday, while today's mail brought in three Alcos. Besides these the club already had three Falcars, as many Staver-Chicagos, two Coles and a Lozier. Two of the Nationals are in the Elgin National and two in the Illinois. The Alcos are in the Elgin National and the Corbin in the Kane County.

Few of the makers have been able to name their drivers as yet. The Alco has selected Harry Grant, Harry Hartman and Frank Lee, who will make up the company's racing team this year. Two of the Alcos are new cars, while the other is the one in which Grant won two Vanderbilts. Mulford will drive the one Lozier that has been entered, while Maisonville has been named as the pilot of the Corbin. Johnny Jenkins will be one of the Cole drivers, while Monckmeier is the only man selected as yet by the Staver. Greiner, Gelnaw and Pearce have been named for the Falcars, but all three of them have quit the services of the company, which will have to select new pilots. The National has six drivers, from whom four will be picked, but as yet it is undecided who they will be.

So far as the course at Elgin is concerned, there is little left to do. Oiling has been going on for a week now, and within the next few days the circuit will be inspected for faults that will be remedied before practice begins, if any are discovered. It also is expected that arrangements for the military will be made soon. There is no doubt about getting the soldiers and it remains only to pick the particular regiment which will do the work.

An inspection of the course was made today by officials of the Chicago Motor Club, who were agreebly surprised to find it even better than expected. The Elginites really have done more than they agreed to and have put $4,000 on the homestretch alone.

CHICAGO'S ORPHANS' DAY—WOMEN HELP FEED THE ORPHANS

CHICAGO'S ORPHANS' DAY—HANDING OUT ICE CREAM CONES AT LINCOLN PARK

CHICAGO'S ORPHANS' DAY

Chicago, July 15—Chicago motorists gave the orphans and old people their annual ride yesterday when more than 1,300 children and 100 from the homes for the aged were taken out by the four local organizations, the Chicago Automobile Trade Association, the Chicago Motor Truck Association, the Chicago Motor Club and the Chicago Automobile Club. Chicago holds its outings later than other cities in order to be sure of the weather and the wisdom of this course was apparent yesterday. No attempt was made to stop at any of the summer parks. Instead the old people and children were put into 160 pleasure cars and thirteen trucks and taken for a ride over the boulevards. They went north first and a stop was made in Lincoln park, where ice cream cones were handed out to everybody. Then the cars headed south and, swinging through the two big parks, stopped at the German building in Jackson park, where more ice cream cones were handed out.

In all, the cars were out 3 hours, in which time they covered something like 30 miles. No mishaps marred the afternoon and the children and old people all had a good time. It is a matter of note that all the children and old people were cared for, there being fourteen local institutions represented in the run. More than enough cars were provided. It was discovered that some of the institutions, evidently anxious that none of the children be overlooked, reported they had more than they really had. One instance noted was where 175 children had been reported, whereas there were only 125 when the cars called.

Credit for the outing belongs chiefly to Dr. H. A. Gunther and John H. Kelly, chairman and secretary respectively of the joint committee representing the four organizations, who worked night and day for a week to complete the arrangements.

NOT 116 MILES IN THE HOUR

Chicago, July 16.—Cable advices from England on July 1 stated that Borodino had driven 116.13 miles in the hour on the beach at Saltburn, but the British exchanges show that this was an error—that Borodino had done ½ mile at that rate. The car he drove was the 300-horse power Fiat, which created a sensation on the beach because of its size, the radiator cap being nearly 6 feet from the ground. To start this monster it was necessary to tow it, then drop in the clutch.

Buckeye Motorists Take In Long Tour

CLEVELAND, O., July 17.—With the sky black with clouds and in a pouring rain the forty cars entered in the Cleveland News 3-day reliability run left the Hollenden hotel Monday morning, promptly on schedule time in the biggest run that Cleveland has witnessed.

Braving the weather a good-sized crowd gathered at the starting place to see the cars leave. Many thought that because of the downpour of rain the run would be postponed, but when at 5:10 a. m. John Rauch drove up in a Krit roadster and announced that he was ready to start, a cheer went up and the contest was on. The remaining entrants started at 3-minute intervals.

Mrs. Fred C. Wood, the only woman driver in the contest, laughed at the rain and started out with a seven-passenger Oldsmobile. She carried her husband, two other men and two women, and was given a great ovation as she pulled out.

Because of the rain that has fallen almost continually in the last 20 hours the drivers have had great difficulty in making the run on schedule time. Though the best roads were picked out for the route, the rain has played havoc with some of them.

The Chalmers 1910 car, winner of the Glidden trophy, carried the official photographer and the newspapermen. The Oldsmobile Autocrat, driven by Andy Auble, carried seven passengers and was the last to leave, starting at 7:15 a. m. Each car starting carried as many passengers, including an observer, as it could hold.

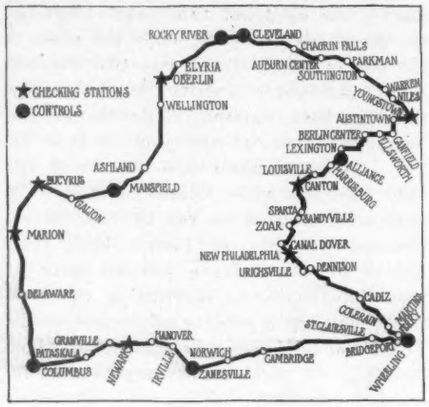
After plowing through mud and climbing rough hills, the contestants arrived at Youngstown shortly before noon and were greeted by a great crowd that had gathered in the square.

The rain, which had been falling in torrents, let up during the morning and, although the roads were very muddy and a number of drivers were obliged to put chains on their wheels, good time was made. Farmers greeted the contestants from every doorstep on the way, and at Chagrin Falls, Warren and Niles, the citizens that had gathered in the town streets cheered the cars as they passed.

The Cleveland Run Rules

Rules governing the test are as follows, being the regular grade 3, 1911 rules of the American Automobile Association for strictly stock cars, in which penalties are imposed for time and road work only, without any technical examination, brake, clutch or motor tests at the end of the run:

Each car carries its passenger load and is allowed for time lost in tire repairs, provided the motor is kept running. Oil and water and gasoline may be taken on at noon and night controls, penalty at other places being 3 points per offense.



OHIO RELIABILITY ROUTE

Penalty for late arrival at noon and night controls, outside of the 3-minute leeway, 1 point for each minute or fraction thereof. Penalty for work on the car while on the road, 1 point per minute or fraction thereof for repairing; and 2 points per man per minute for replacement of injured part, if the replacement is made by car crew; and 4 points per man per minute if the replacement is made by person or persons not riding in the car.

Each car carries an official observer. The contest speeds are: Division 1A, 16 miles per hour; divisions 2A and 3A, 18 miles per hour; and divisions 4A, 5A, 6A and 7A, 20 miles per hour. At the end of each day's run complete lubrication of the car is permitted.

The entries are as follows:

No.	Name of Car	Bore Stroke	Driver
1	Columbia	4⅞x5½	C. H. Tyler
2	Maxwell	4¼x4¼	C. G. Bleasdale
3	Velie	4½x5¼	D. W. Iseminger
4	Velie	4½x5¼	Harry L. Lance
5	Oldsmobile	5x6	Andy Auble
6	Oakland	4x4	Fred Krum
7	Cadillac	4½x4½	Tom Swan
8	Krit	3¾x4	John Rauch
9	Brush	4x5	E. McCoy
10	Firestone-Columbus	4¾x5¼	Harry Kortz
11	Garford	4¾x5¼	Ira Fouche
12	Buick	4¼x4½	F. B. Smith
13	Jackson	4⅞x4¾	C. D. Paxson
14	Regal	3¾x4½	L. B. Moore
15	Regal	4x4½	G. P. Sperry
16	Marmon	4½x5	J. H. Greenwald
17	DeTamble	4¼x4½	H. W. Orndorf
18	Abbott	4x4½	R. E. McClellan
19	Peerless	5x5½	T. S. Hammer
20	Bergdoll	4x4½	F. A. Kaiser
21	Oakland	4½x5	H. Bauer
22	Everett	4x4¾	J. Gardham
23	Stuyvesant	4⅞x6	P. H. Brown
24	Chalmers 1910		Official press car
25	Chalmers		Official photographer
26	Cartercar	4¼x4½	V. R. Hall
27	Krit	3¾x4	H. Higginbotham
28	Lion	4½x5	H. Bloomstron
29	Norwalk	4x5	F. Taylor
30	Norwalk	4x5	T. J. Ruffel
31	Ford	3¾x4	F. E. Van Paton
32	Ford	3¾x4	A. H. Smith
33	Ford	3¾x4	H. J. Lytle
34	Mitchell	4¼x5	E. C. Lucas
35	American	4¾x5	C. Kagy
36	Van Dyke	4x6	F. J. Monsette
37	Reo	4x4½	A. G. Bredbeck
38	Maxwell	4¼x4¼	G. A. Roberts
39	Oldsmobile	*	Mrs. F. C. Wood
40	Brush Liberty.	*	Chas. Ross

*Non-contestant

Runs of Monday and Tuesday

Cleveland, O., July 18.—Headed by the Garford pilot car, the contestants entered Alliance shortly after noon Monday. The roads from Youngstown to Alliance were untouched by rain, so that the best time of the trip was made between these towns. E. B. Finch, driving the Chalmers car that won the Glidden trophy, had five punctures and blowouts during the morning.

Tired, hungry, dirty but enthusiastic, the contestants pulled into Wheeling Monday night, completing the first day's run of 212 miles. The cars were checked in at the Stratford Springs hotel, and most of the drivers retired immediately. The majority of the cars finished with perfect road scores.

Monday's run probably was the most gruelling the cars will be called upon to make. The route took the cars up and down hills that made the engines and brakes groan. There were stretches of a mile or so that resembled a Vanderbilt course, and there were the typical country sand roads that forced the cars to produce the limit of their power.

With new supplies of gasoline and oil the contestants checked out of Wheeling at 7:30 a. m. Tuesday. The trip takes them through Zanesville, Newark and Granville to Columbus. The cars started in perfect weather, with the sun shining brightly and without a cloud in the sky.

John Rauch, driving a Krit, had seventeen punctures and did not check into Wheeling until 4 a. m. Tuesday. He started the second day's trip with the other cars.

At 1 o'clock Tuesday afternoon, twenty-five of the contestants checked in at Zanesville. The morning proved to be the hardest kind of a hill-climbing contest. The famous St. Clairsville hill, just outside of Wheeling, is almost 5 miles in length and taxes cars to the utmost. Much of the route was along the old national pike. The van of the tourists reached Newark at 4 p. m., after a good afternoon's drive, and were met by an enthusiastic crowd. The going was hard all day, and penalties piled up with great rapidity.

Wednesday's Run

Cleveland, O., July 19.—Special telegram—Cars began checking out of Columbus at 5 o'clock Wednesday morning to enable an early arrival in Cleveland. The run to Mansfield, the noon control, was 89.6 miles and the total is 173 miles. Sixteen of the cars that started in the run finished the second day's run at Columbus Tuesday afternoon with scores nearly perfect.

Definite results regarding the outcome of the contest will not be known until every car has checked in at Cleveland and the observers have made their final reports. The cars that lead so far are the Maxwell, Velie, Oakland, Brush, Firestone-Columbus, Jackson, Regal, Marmon, Everitt, Krit, Lion, Norwalk and Ford.

To those that finish in Cleveland

Wednesday with a perfect score, the News will award a trophy.

The cars began to arrive at Columbus shortly after 5 o'clock Tuesday afternoon. They assembled in the outskirts of the city, where the checking station was located. Here they were joined by a large number of Columbus motorists, who led them in a parade through the principal streets of Columbus. A big crowd lined the thoroughfares of the city and cheered the cars as they passed. In the evening all the contestants were invited to the Columbus Automobile Club rooms, where they were entertained as guests of the local organization. By 11:30 most of the contestants had checked in at the noon controlling station at Mansfield.

DETROIT TRADE GOSSIP

Detroit, Mich., July 16.—The general run of dealers visiting at the Detroit factories continues very heavy, and 1912 contracts are being closed daily in ways which lead the manufacturers to unite in the prediction of increased prosperity. The dealers all seem hopeful, and it is generally noted that a larger percentage of dealers make deposits with their orders. Last year several of the factories waived the deposit, which had ben customary up to that time. The system again has been put into force, with the result that several of the factories are able to finance virtually all their purchases of material with the deposits which are being made by their dealers.

Present appearances warrant the prediction that the Detroit production of 1912 will be considerably in advance of the season that is now virtually closed. This will be true particularly with all the older firms whose retailing arrangements are on a settled basis.

The younger manufacturing firms still continue to find difficulty in securing representation, particularly in the smaller cities of the country. It is a generally admitted fact that there are fewer dealers in the country now, and fewer additions this season than at any prior time in recent years. On the other hand, those dealers now in the business are virtually all of them well established and financially capable.

Detroit parts-makers and manufacturers of special machinery all feel the prosperity of the busy season, and many of them are increasing their equipment. There will be several additions to their ranks next year, prominent among which will be the Henry & Wright ball-bearing drill press plant, which now has a plant in process of erection near the plant of the Hudson Motor Car Co. The Cross Gear and Engine Co., 800 Bellevue avenue, recently increased its capital stock from $20,000 to $80,000, and will materially increase its plant.

STEVENS-DURYEA CHANGES

Springfield, Mass., July 17—Rumors are current here relative to a reorganization of the Stevens-Duryea Co. I. H. Page, president and treasurer of the company, has disposed entirely of his holdings in the concern, and it is stated that a very prominent man from one of the middle west cities, and engaged in another field, has been made general manager. It is understood there will be some changes made in the general policy of the company and a very aggressive selling campaign organized.

A further report, which has been denied by the Stevens-Duryea Co., is that the company has been sold out to the Orson Co. and that the Chicopee Falls plant would be abandoned and the cars built at a new factory in this city.

N. A. A. M. SHOW PLANS

New York, July 16—The wisdom of the National Association of Automobile Manufacturers, Inc., in selecting January 10-17 as the dates of its show at the Grand Central palace, New York, and of combining passenger and commercial vehicles in one show, is already recognized. One hundred and thirty-three manufacturers of cars, who are not members of the Automobile Board of Trade, wrote to the National association in relation to the coming show. Sixty of them pledged themselves unconditionally to take part; forty, nearly all of them very small and very distant concerns, said that they were not interested and the remainder were unable to give a definite reply. It is certain, therefore, that even with its immense facilities the building will be completely filled.

It was not the intention of the National association to ask the Motor and Accessory Manufacturers to participate, because it felt that its members would have enough to attend to with the garden show. The Motor and Accessory Manufacturers soon made it plain, however, that it would expect to be admitted, and on Friday last, arrangements to that end were completed. The Motor and Accessory Manufacturers will occupy 20,000 square feet of space on one of the upper floors.

The rules, diagrams and application blanks already are in course of preparation, but it is unlikely that they will be issued or any applications received before September.

NEW TIRE CONCERN

South Bend, Ind., July 16.—Arrangements have been practically completed for the locating here of a large tire manufactory, formed by rubber manufacturers of long experience of Akron and Mansfield, O. The company will be known as the South Bend Tire and Rubber Co. and it will erect a factory employing several hundred men. The factory building will be fully equipped with modern machinery and will be located in the west part of the city on 6 acres just purchased for that purpose. The company also has an option on 12 acres adjoining the 6 to be used for future expansion.

The personnel of the company will include W. H. Blecker, of the Royal Rubber Co., of Akron, who will be president; W. A. Bentley, who will be vice president, and M. G. Bentley, of Mansfield, Ohio, also a rubber manufacturer, who will be secretary. Two other Akron men will be interested financially, while a South Bend man will be treasurer. Preliminary plans for the proposed factory building call for a large fireproof structure 180 by 60 feet in dimensions.

TWO CLEVELAND RUN CONTESTANTS, THE AUBLE OLDSMOBILE AND KIRUM OAKLAND

Hoosier Makers Tour In Four States

Commercial Display of Indiana Motor Cars Proving Huge Success—Twenty-Seven Machines In the Party—Travelers Spend Sunday In St. Louis and Will Be In Chicago Saturday

ST. LOUIS, MO., July 17—Full of vim and enthusiasm the twenty-seven cars representing part of the motor manufacturing industry of Indiana pulled away from the Jefferson hotel here at 7 o'clock today to start the fifth lap of the 12-day tour of the states of Indiana, Illinois, Missouri and Iowa.

The party has completed over one-third of its 1,400-mile trip. Everyone thus far has pronounced it a success. Three Indiana-made trucks and a Waverley electric accompany the long line of gasoline pleasure vehicles. There has not been a single accident to mar the trip, no mechanical difficulties and very little tire trouble.

It has been practically decided that the tour will end on July 23 at Newcastle, Ind, with a picnic, when the tourists will be the guests of the Maxwell-Briscoe company. At this gathering it is hoped to have every motor car factory in the Hoosier state represented and to there form what will be known as the Indiana Automobile Manufacturers' Association.

The party encountered fair roads until Pekin, Ill., was reached. From that time on the terra firma was dusty, full of holes, bad turns and poor bridges. Paris, Ill., made the visit of the Hoosiers a holiday, spending a large amount of city funds to entertain properly. Fireworks, band concerts and speeches were carried out under auspicious circumstances. Decatur, Ill., also gave the tourists a big reception, as did St. Louis. But the third night's stop, Springfield, was a day of rest. Decatur presented the tourists with the key of the city. This handsome article was later purloined by someone and the key of Decatur has been lost.

Many amusing incidents have occurred, the majority of them being caused by passengers going to sleep and awakening in culverts, with the driver standing over them with a huge smile. The cause—Illinois roads.

The tourists' stops for the coming week are: Monday, Quincy, Ill.; Tuesday, Burlington, Ia.; Wednesday, Davenport, Ia; Thursday, Dubuque, Ia.; Friday, Rockford, Ill., and Saturday and Sunday, Chicago. The Congress is to be the official hotel.

The vanguard of the Indiana four states tour is a long blue-nosed National carrying the tour officials and piloted by Johnny Aitken. The other racing drivers are Howard Wilcox of the National, Johnny Jenkins and H. N. Richey of the Cole racing aggregation. Wilcox is driving a National roadster, Richey the Cole press car, and Jenkins a Cole toy tonneau. Richey is a one-armed race driver, his latest achievement being the winning in his class of a trophy in Iowa's little Glidden tour.

The officials for the Indiana four states tour are: Chairman, Frank E. Smith of the Maxwell factory at Newcastle, Ind.; secretary, P. P. Willis of the Mais truck, Indianapolis; chairman of the entry committee, A. E. Vinton of the National, Indianapolis; treasurer, Fred N. Coates of the Lexington, Connersville; chairman of the press committee, H. C. Bradfield of the Cole, Indianapolis, and pilot, W. D. Edenburn of the Indianapolis Star.

The object of the Indiana four states tour is to allow the public in the states of Indiana, Illinois, Missouri, and Iowa to inspect cars made in Indiana factories by Indiana labor. It is the first time in the history of the industry that motor car manufacturers of one state have banded together in a movement of this sort, but it is claimed by the tourists this movement is laying the foundation to make such events annual affairs.

The cars, their numbers and drivers are as follows:

Car No. 3—Great Western, Peru, Ind.; driver, Philip B. Day.
Car No. 8—Lexington, Connersville; driver, Fred N. Coates; confetti car, carrying Pilot W. D. Edenburn, of Indianapolis Star.
Car No. 9—Lexington, Connersville; driver, A. E. Leiter.
Car No. 10—Cole, Indianapolis; driver, H. M. Richey; press car, carrying chairman of the press committee, H. C. Bradfield, visiting newspaper men; also hospital car, with Dr. C. D. Strickland.
Car No. 11—Cole, Indianoplis; driver, Johnny Jenkins.
Car No. 12—New Parry, Indianapolis; driver, Joe Louns.
Car No. 13—Mais truck, Indianapolis; driver, George Turner.
Car No. 14—New Parry, Indianapolis; driver, Leon Champion.
Car No. 16—Maxwell, Newcastle; driver, Jack Clemons.
Car No. 17—Maxwell, Newcastle; driver, Howard Van Meter.
Car No. 19—Continental, Franklin; driver, Paul Curlan.
Car No. 2—Continental, Franklin; driver, John Hayden.
Car No. 20—Nyberg, Anderson; driver, Lee Berg.
Car No. 21—Nyberg, Anderson; driver, Frank McCurdy.
Car No. 22—American, Indianapolis; driver, Charles Boyden.
Car No. 23—American, Indianapolis; driver, H. Jefferys Fletcher.
Car No. 24—Ideal truck, Fort Wayne; driver, T. A. Sperry.
Car No. 26—Lambert, Anderson; driver, B. Kiger.
Car No. 27—Zimmerman, Auburn; driver, Bert Farrand.
Car No. 28—National, Indianapolis; driver, H. Wilcox.
Car No. 29—National, Indianapolis; driver, Johnny Aitken; pilot car, carrying tour officials, as follows: General Chairman Frank E. Smith, Maxwell; Secretary P. P. Willis, Mais truck, and chairman of the entry committee, A. E. Vinton, National.
Car No. 30—Premier, Indianapolis; driver, Walter Wiedley.
Car No. 32—Marmon, Indianapolis; driver, George J. Treadgor.
Car No. 33—DeTamble, Anderson; driver, Milt Alphont.
Car No. 34—Whiteside truck, Franklin; driver, W. F. Whiteside.
Car No. 35—Waverley electric. Indianapolis; driver, J. M. Ward.

START OF THE FOUR-STATE TOUR FROM INDIANAPOLIS

MIDLAND BUSY PATHFINDING

Ely, Nev., July 12—The Midland pathfinder, which is laying out a direct route through scenic America for the use of transcontinental tourists on their way to the Panama-Pacific exposition, was entertained in Ely by the enthusiastic members of the motor and commercial organizations. The pathfinding party made the 300 miles across the desert from Salt Lake City to Ely in 15 hours' running time. The longest distance between points where water could be found was 60 odd miles. Excellent night accommodations were found at the Kearney and Shelbourne ranches.

The Midland, which left Moline 3 weeks ago, is scheduled to make the 2,528 miles between Moline and San Francisco in 132 running days. To date the party has made 2,006.6 miles in 93 hours 15 minutes, averaging a little better than 21 miles in Scofield, Utah, and climbed 5,000 feet

Owners Find Western Roads Are Good

in 4.2 miles to reach this point. It also is the first car to reach Ely on a trip from the east, all other cars having gone through from the west.

The running time from Moline to Denver averaged 31 miles an hour. To Mack, Col., the average was 25.5 miles an hour. From Mack to Schofield the roads, with the exception of those in Price county, Utah, were found impracticable for tourists.

The Midland route as laid out and logged from Moline to Ely follows the Union Pacific closely to Denver with a short cut to that city by way of Bennett. It differs from the usual route of tourists in that it does not go north by way of Cheyenne nor south by the Santa Fe trail through New Mexico and Arizona. From Denver it heads directly west for the scenic attractions that are to be found in the Rockies.

GOOD ROADS TRAIN GOING OUT

Richmond, Va., July 15—Motorists throughout the state are expressing appreciation over the announcement of the Southern Railway that the good roads train of that system will tour the state. This train, which has just completed a tour of Alabama, Mississippi and Tennessee, has just entered North Carolina, and after traversing that state, will come into Virginia and will be in Richmond on October 30-31 and November 1, at which time the National Good Roads Association will be in session here.

The good roads train is composed of three exhibition cars. Daily lectures are given by expert road men, illustrated with stereopticon views, charts and maps, showing the progress of good roads movement throughout the south.

BLAZING CANADIAN TRAIL

Winnipeg, July 14.—Latest advices report the arrival of the Halladay pathfinder, which is mapping out the route for the modern power Canadian national reliability tour, at Calgary, where a stopover for Sunday was made. Owing to the heavy rains, which were general over the whole of western Canada, the first week of the run was made under many difficulties, as the country was inundated, owing to a cloudburst, which followed the week of steady rain. The route was resumed from Calgary to Edmonton, the last point on the westward trip, and, after completing arrangements for the accommodation of the tourists, the Halladay car will be headed east on its return journey to Winnipeg, following the main line of the Canadian Pacific by way of Saskatoon, Regina, Broadview, Virden, Brandon, Carberry, Portage la Prairie and Headingly, entering Winnipeg by the direct road from the west.

Easteners Bound For Pacific Coast Touch Denver—Trip so Far Has Been an Interesting One and Amateurs Expect To Cross Rest of Continent Without Experiencing Trouble

DENVER, COLO., July 16—With the ocean-to-ocean amateur-owner tourists well on the last half of their transcontinental journey, it will be extremely interesting to motorists in every part of the United States to know something of the conditions and experiences encountered on this bold dash from the Atlantic to the Pacific. There was nothing unusual about that portion of the run between Atlantic City and Indianapolis and Chicago. It is the western portion of the journey, dealing with practically unexplored wastes of the extreme western states, in which general interest is centered.

Leaving Indianapolis the occupants of the ten Premier cars and the prairie schooner commissary and baggage car that was added in the Hoosier home of the Premier, made their next important stop at Chicago. The roads were good to the Windy City. Davenport, Ia., 178 miles from Chicago, was the next control, and it was reached at 6 p. m., July 8, after the best running of the tour. At that point the tourists were unanimously of the opinion that a transcontinental highway exists for the gentleman tourist. From Davenport to Southanna, a distance of 75 miles, the going was on velvet. Then it rained in torrents, and gumbo roads were experienced for the first time. The night control at Colfax was made on schedule, and the entire distance for the day was 168 miles. The next day, July 10, after a run of 197 miles, the ocean-to-ocean tourists reached Omaha. The road conditions were ideal.

At the noon control, July 12, the second thousand miles of the tour was completed, and at that time the tourists again voted that there are no unsurmountable difficulties in transcontinental touring. The first Premier camp was made 5 miles outside of Lexington, Neb., on the site of the first Nebraska homestead issued by President Grant. The run for the day was 150 miles over ideal roads.

At Julesburg, Colo., Friday night, July 14, the tourists received one of the most rousing welcomes of the tour. They were met by a suffragette brass band, the mayor and leading citizens, after they had been accompanied from a distance by an escort of twenty cars. A large number of cowboys, many of whom were in their own cars, held the right line in the reception. The day's run was 170 miles, and, because of the change from the sand plains and bluffs of Nebraska to the old Oregon trail, it was one of the most interesting of the tour.

Denver was the next night control, and Sunday was spent in this city enjoying the many interesting sights and resting.

LITTLE GLIDDEN CUPS PRESENTED

Des Moines, Ia., July 17.—Fourteen cups were presented to the winners of the Des Moines Little Glidden tour at a banquet given here Friday night at the Hyperion Field and Motor Club, under whose auspices the recent run was held. E. E. Butler, referee of the run and representative of the A. A. A., whose rules governed the run, presided as toastmaster and presented the trophies. D. S. Kruidneir, whose Cadillac came through without a penalty in the road or technical tests, was presented with the sweepstakes cup. Only the men who drove cars or took part in the run were present at the banquet.

NATIONAL AND COLE, OFFICIAL CARS IN INDIANA TOUR

Trying To Improve on Old Dame Nature

Efforts on the Part of Inventors To Produce Substitute for Rubber Have Failed—Motor Car Largely Responsible for the Great Demand and Now Annual Product of the Compound Is 200,000,000 Pounds

By George Ethelbert Walsh

EVERY time a motor car tire bursts, or you get an uncomfortable jolt from the hard rubber tire of your business truck striking a deep rut in the road, you are apt to think about rubber, and wonder why it is that somebody does not make artificial rubber and save you all this unnecessary expense. Every now and then you read of somebody inventing a process of making artificial rubber, but you look in vain for its appearance on the market and finally conclude by the stiff price of the genuine article that the report was at least premature.

Yet, theoretically, rubber seems the simplest thing in the world to manufacture. A German inventor boiled isoprem with acetic acid in a closed tube, and made something that seems pretty near rubber. But it isn't quite. Take the juice of the ordinary milkweed and examine it chemically, and you will find that you have practically all the ingredients of rubber. Add sulphur in the right proportions, and you might produce a fairly good rubber, but it is only serviceable for minor uses. Boil tar, sulphur, lampblack, litharge, and whiting in certain proportions, and then throw in a little pure Para rubber, and you have a compound that is a near imitation of the article used in the manufacture of rubber shoes.

Making Artificial Rubber

Fortunes have been spent in trying to make artificial rubber, and some scientists will tell you that it can be made, but like artificial diamonds in such small quantities that there is not any money in it. It may be that some industrial chemist nosing around the refuse heaps of factories and mills will eventually discover a practical method of making a good imitation of the genuine article. If so he would easily make a fortune, benefit mankind enormously, and incidentally cause a great readjustment in the rubber business of the world.

Now rubber has become essential to our modern methods of living, and we are almost as dependent upon it as upon wood, iron or copper. Of course the motor car has been largely responsible for the boom in rubber, but we use it in addition to making goods of a thousand different natures—overshoes, rubber boats, mackintoshes, druggists and surgical goods, belting, hose, matting, insulated wire and cable coverings, carriage covers, golf balls, dress shields, and many sporting articles. Not all of these goods are made of pure rubber.

If we have not any way to manufacture artificial rubber, we have at least discovered processes of adulterating it. The amount of pure Para rubber that goes into nine-tenths of the socalled mechanical rubber goods varies all the way from 10 to 50 per cent. Nor is it altogether desirable that they should be made of rubber entirely. Some of the adulterations make a distinct gain upon the pure article. For instance, we have discovered processes of treatment with other ingredients which enables rubber to resist the destructive action of oils. Other ingredients are added to make the rubber defy the injurious effect of heat, and still others make the rubber more elastic, more durable, and more adaptable to special demands.

Annual Rubber Output

The annual harvest of rubber amounts to some 200,000,000 pounds, and we get this all from certain well defined tropic and sub-tropic lands which belt the whole earth from one hemisphere to the other. The rubber belt includes part of the Philippines, the Malay states, Java, Sumatra, Borneo, India, Africa, South and Central America and Mexico. Judging from its size one would not suspect that a famine would ever occur, and yet periodically the rubber crop becomes a critical world index of trade conditions.

One great reason for this is that the rubber trees have not been cultivated to any great extent, and the world has been relying upon the wild forests to supply the demand. So long as these hold out there will be no danger of prohibitive prices for rubber. But we are assured time and again that the wild rubber forests are rapidly being denuded, and that the pinch will soon be felt if we do not do something to ward off the approaching famine. But somehow new forests of rubber trees are found in the jungles of South America or Africa and India, and the impending catastrophe is indefinitely postponed.

Still the world is taking stock of its rubber supply with far more seriousness than ever before. Even to the extent of planting forests in the rubber belt this fear of a depletion of the crop is shown, but so far the cultivated rubber tree is of relatively small importance in the world of trade.

Another thing which affects the question is the crude way of harvesting the rubber crop. The rubber is gathered by ignorant natives, and they waste and lose nearly as much as they harvest and sell. Thousands of fine trees are cut down and destroyed every year with wanton disregard of the consequences, and enough trees are left rotting in the woods to furnish a few million motor cars with solid tires. Fortunately nature works hard to keep pace with man's wastefulness, and sends up shoots at the base of the destroyed trees and in 7 years produces sizeable trees for another crop. But 7 years is a long time to wait for another crop when a little foresight in tapping the trees would make the harvest of the rubber continuous.

Gathering Rubber Dangerous

Great crimes and injustices have been committed in the name of rubber, and for every tire we use perhaps there has been sacrificed the bloody sweat of many a native. The number of Indian rubber gatherers in Peru and Bolivia who succumb to fever and deprivations is very large, and it is becoming increasingly difficult to get workmen to go forth into the woods after this article. In eastern Bolivia the majority of the Indians in the districts of Mojos and Chiquitos have either died or left, and great inducements have to be made to import Indians from other parts. The owners of rubber plantations are not always as considerate of their employees as in more highly civilized regions of the earth, and many tales of cruelty and massacre are reported. The Bolivian government has in recent years tried to check the sale of Indians as slaves to work on the rubber plantations, and Peru has taken similar steps; but both are vast countries and sparsely settled so that evil practices may obtain for a long time in many parts without official knowledge reaching the government authorities.

Rubber is obtained not only from the trees which grow 50 and more feet in the air, but from vines commonly known as grass rubber. These vines are found abundantly in Africa, and the natives tear them up ruthlessly for the rubber. So far science has found no way to extract the rubber from these vines except by uprooting them. But once again nature with her wonderful adaptability steps in to preserve her children. Small rootlets remain in the soil when the main vine is pulled up, and from these rootlets spring up new vines to replenish the denuded land. It takes time for the young shoots to produce vines of commercial size, but in a few years the harvest is ripe again for another season of destruction.

Brazilian Rubber Best

In Brazil grows the best rubber of the world. Para rubber is the synonym of the best and purest. Pure Para rubber is the highest priced in the market, and it goes up a little nearly every year. Still Para

rubber comes from an enormous district, and thousands of square miles of it are still untouched and scarcely explored. But the forests nearest the transportation lines have been pretty well depleted, and the gatherers must penetrate further and further into the interior for their supplies. A thousand miles up the Amazon from the Atlantic ocean where the Rio Negro enters it, the Para rubber is found in its greatest abundance. Vast, solitary stretches of almost impenetrable forests are scattered around in every direction, and in these forests the rubber trees are found in abundance. The soil is so rich that vegetation springs up almost in a night, and vines grow into trees, and flowers grow and expand until they are as large as cabbages. It is a swampy woods that never loses its green, and each successive layer of vegetation forms a deeper matting of fertilizer for future crops of plants to feed on. In these dense woods the Indians must hunt out their trees and gather the rubber at risk of life from fever, snakes, animals, and a thousand and one pests. Only natives can live for any length of time in the forests. It is no place for the white man. He would succumb to disease and sickness in a short time. That is one reason why rubber is still gathered in a primitive way by the ignorant and shiftless natives. Attempts to import and colonize regions with a higher grade of laborers to work the rubber forests have miserably failed at great loss of life and money.

Transportation Very Costly

Usually the rubber gatherers are in the employ of some owner of an estate or plantation, who grubstakes them with dried beef and cane rum, and pays them a nominal wage after the rubber has been sold and all commissions and expenses deducted. Allowances must be made for shrinkage—usually 50 per cent—and also for waste and loss in the transportation. The steamboats which ascend the Amazon and its tributaries to transport rubber charge heavily for the work, and by the time the rubber reaches Para or Manaos it has a burdensome tax levied upon it. Then there is an export government tax before the gum can leave the country, and the long transportation from Brazil to America or Europe adds another big item to the total expense.

Daily Work at the Rubber

The method of tapping the trees, on plantations that are jealously guarded by their owners from ruthless destruction, is to cut a few ridges in a tree with a small hatchet, and then stick a tin cup in to catch the latex. Usually one gatherer will tap 100 or more trees, cutting his way through the woods to reach them. With a path once formed it is a simple matter then to visit all of the trees from day to day. He makes the round again and again. A cup is removed from the tree and its contents poured on a piece of wood. This is dried over a palm nut fire. The operation is repeated many times until a good size lump of gum is obtained. Then this is cut off the piece of wood and placed along with other similar lumps for market. He will remain in one region for weeks and months, visiting the tapped trees daily until the latex no longer flows. Sometimes he will then rub swamp mud over the wound and leave it to heal up. The following year the same set of trees may be tapped again.

A plantation of Para rubber trees will yield a good income for years, and then the trees must be given a few years of rest. The constant tapping weakens thir vitality, and if not allowed to get some of it back they will die. In the great Para districts even the most ignorant natives realize this, and they are not inclined to kill the goose that lays the golden eggs. So the rubber trees are preserved here as nowhere else in the world. The Dyaks of Borneo, the Negroes of Africa, and the Jananese of Java and Sumatra are more apt to cut down the trees to drain them of their latex than to tap them.

Para rubber trees have been planted in groves in different parts of South and Central America by both American and European companies in recent years, and some of these have paid good dividends on the investments. The Para tree takes 15 years to mature in the forests, but it has been found to yield in the fourth and fifth year on plantations where proper cultivation is given. This fact has stimulated the different governments of the world to experiment with rubber trees, and it may be that before another decade half the world's supply of rubber will come from cultivated plantations instead of from the wild forests. In that event rubber will have to readjust itself to the new conditions of the trade, and the poor Indian rubber gatherers of the upper Amazon will have their monopoly taken from their hands.

Hoarding Scrap Rubber

Meanwhile, scrap rubber is being carefully hoarded and manipulated. Old rubber is utilized over and over again in the manufacture of mechanical rubber products. Every pound of it is of use, and with added ingredients it can be stretched to do double service. And the investigators of the various processes of making synthetic rubber are not idle; they are working hard to invent a process which will make artificial rubber nearly if not quite as good as the real rubber.

Cynthia's Chauffeur

CYNTHIA'S Chauffeur,'' by Louis Tracy, is a good story of love and adventure in a motor car. The plot contains an interesting young American heiress, who is motoring with a match-making and intriguing chaperon. There is an impecunious French count who is looking for just such a prize as this rich American girl, and an English nobleman in disguise serving as a chauffer for the women. This brings many an interesting episode into the story. The scene is laid in England and as the American girl travels she finds herself in the humiliating position of falling in love with her chauffeur. The climax is brought about by a duel between the French count and the chauffeur over the attentions given the young lady. An English wedding follows. Edward J. Clode, New York, publisher.

A Racing Romance

''Stanton Wins'' is the title of Eleanor M. Ingram's latest novel of the motor car and race track. Stanton is a big, gruff, surly fellow and a skilled but reckless driver. Just as the cars are lined up at the judges' stand waiting the starter's signal, Stanton's mechanician drops dead from heart disease. Because of Stanton's reputation as a fearless driver he finds it difficult, although offering a goodly sum of money, to secure another. At the last moment a slight, frail young lad, fair of face, offers his services and is reluctantly accepted. The mystery surrounding the young mechanician whose identity is easily guessed, the affection of the big, gruff Stanton for his youthful assistant, a young woman's treachery in order that another car may win the race, the hair-breadth escapes on the track, make up the plot of a story that can be easily read in an hour or so. The romance of the racing game is sufficiently fascinating to make the reader loath to lay down the book before it has been finished. The Bobbs-Merrill Co., Indianapolis.

British Motor Tours

The Dunlop Pneumatic Tyre Co. has issued a pocket size 1911 edition of ''Motor Trips at a Glance.'' This 412-paged, red-covered book contains a vast amount of touring information for the motorist intending to tour the British Isles. It consists of a compilation of short circular and other tours in England, Scotland, Ireland, and Wales, as well as tours in France, these tours ranging from 44 to 1,600 miles in length and from a 3 hours' spin to a 3 weeks' tour, each itinerary having its sketch map. Week-end tours to the seashore also are furnished. Following the introduction is a condensed description of the scenery and aspects of the country to be seen on these tours. The last 150 pages consists of illustrations of the roadside curiosities, interesting places and things that can be seen on many of the tours. Published by A. J. Wilson & Co., Ltd., London.

Routes and Touring

GEORGE ADE SUGGESTS NEW ROUTE FROM CHICAGO TO INDIANAPOLIS

HAZELDEN FARM, Brook, Ind.—Editor Motor Age—As a subscriber to your valuable magazine and also as a friend of the touring motorist who is looking for new roads to travel, I am taking the liberty of sending Motor Age some information regarding a new route from Chicago to Indianapolis. With the recent improvement of roads through Newton county, we now believe that we can suggest an improved route for cars touring down this way. I can assure motorists that anyone following these directions will find better roads than by following the old beaten path through Rensselaer. At any rate, if Motor Age wants the enclosed information, it is welcome to it.

Motorists who are bound for Lafayette, Ind., or Danville, Ill., or any point between these two towns or south of them, may find it advisable to try the following new route through Newton county, Indiana. They will encounter only about 3 miles of dirt road on this route after crossing the Kankakee river.

Any map or route will guide the driver to Shelby and Thayer, Ind., on the Kankakee river. Instead of turning east near Thayer—the old route to Rensselaer—keep straight ahead, south, on the stone road. Six miles south of Thayer, when you see a sand ridge looming ahead of you, leave the stone road—it is the end of the road—and make a short jog to the left, east, and then continue 2 miles south over unimproved dirt road punctuated with a few sand hills. The road along here will be about the worst of the run, but there isn't much of it.

Two miles south from the jog, after negotiating a few hills and running out into level country, you will cross an iron bridge over a drainage ditch. This is important—as soon as you have crossed the bridge turn to the right, west, and take a road leading across the fields, parallel with the big ditch. You will think you are coming to the jumping-off place, but you are merely making a short cut to the stone road. After turning west look out for two bumpy bridges close together. Go 1 mile west and you come to a knoll with oak trees. Skirt the edge of the knoll and cross a little bridge and you are on stone road and headed west. Cheer up! You are past the bad places.

Keep going west and you will observe the Templeton school on the left. After following the stone for over 4 miles you come to a cross-roads, stone in three directions, and a dirt road leading north. Also a cement culvert and an R. F. D. box marked 32 to complete the identification. Turn left, south, here, following the telephone line.

Go 1¾ miles south on the stone and then ½ mile west. Easy along here. All you have to do is follow the stone. If you leave it you will sink. After taking the ½-mile turn to the west and just before turning south again, you will notice about 1 mile to the northwest a prominent sand-hill covered with trees. This is Bogus island, formerly headquarters for a notorious gang of horse-thieves and counterfeiters.

After turning south from the half mile jog, follow stone 1 mile south to end of road and then turn right, west, and cross the tracks of the C. and I. S. railroad near Enos station. After crossing tracks continue ¼ mile west to first road leading south, turn south and go 5 miles straight away into the town of Morocco. If you are headed for Kentland or points south of it, say, Danville, Ill., continue south from Morocco.

If you are headed for Lafayette or any point beyond, continue south through Morocco, crossing Eastern Illinois tracks, and take first stone road leading to the left, east. Proceed east over C. and E. I. and C. and I. S. tracks and go 2 miles to corner where wind pump stands back in a grove at the right of the road. Turn to the right, south, here, still following the stone road, and go 1 mile to end of road. Turn to the left, east, before bumping into a country school house straight ahead.

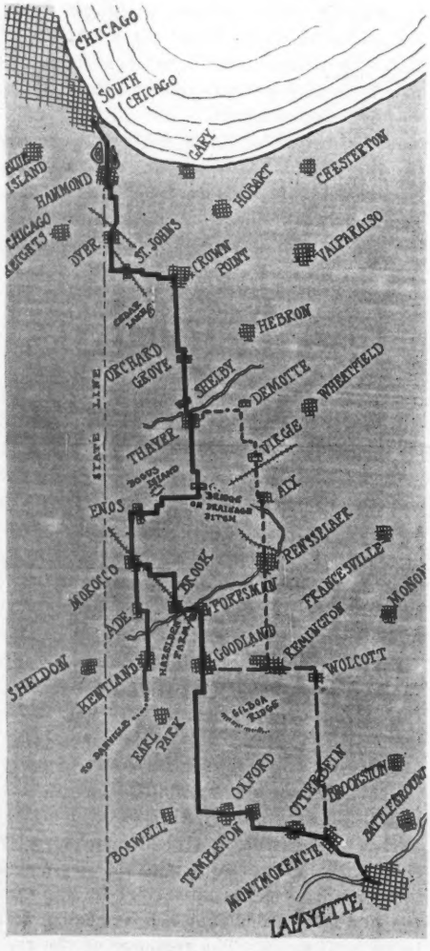
Go east over stone 1½ miles and continue over dirt and gravel road about 1 mile farther, past white school house on left hand side, until you come to a cross-roads where the R. F. D. box bears the name of Foster Brunton. At the cross-roads turn to the right, south, and go 1 mile, then jog to the right, west, and continue south on stone road to the town of Brook. Go south in Brook to McKinley park, on left hand side. Turn at corner marked by soldiers' monument to left, east, and go 2 miles, cross a bridge over the Iroquois river, and Hazelden, the summer home of George Ade, will be at your right.

Continue through the little town of Foresman, crossing railroad tracks, and take the first road leading south, right. Go straight south 7 miles into Goodland.

From Goodland you have the choice of two routes to Lafayette; both are outlined herewith. Each will give you stone or gravel all the way, but the second one, shown by the dash line in the map, may be preferable during the summer of 1911, on account of new stone being placed on the roads near Oxford. Under ordinary conditions there is little choice between the two, except that the second is about 4 miles shorter.

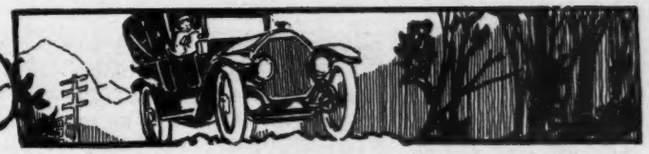
On the first route, shown as solid line in the map, continue south through Goodland to the end of the road. Turn west, right, at south end of town and jog across railroad tracks and then turn south, left, on main stone road to end of road—about 3 miles. Turn west, right, and go two miles to stone road leading south, left. Follow this road south into Fowler—7 miles. Continue south through Fowler.

Keep on going south from Fowler 6 miles until you see the Lake Erie tracks ahead and the grain elevator at the town of Chase over to your right. Do not cross the tracks. Turn east, left, at the corner marked by perforated iron sign-board and go 4 miles into the town of Oxford. Continue through Oxford, passing a stable marked in large letters as the home of Dan Patch, the famous pacing horse. Continue east past Templeton and across Big Four tracks—2 miles. Keep



NEW ROUTE BETWEEN CHICAGO AND LAFAYETTE SUGGESTED BY GEORGE ADE

Information



on east until you come to the second school house standing at the right of the road, then turn south, right, and after going south 1 mile, turn east, left, and go 2 miles to the end of the road, then south 1 mile to the end of the road and east in Otterbein.

Continue east through Otterbein for about 2 miles to diagonal road leading southeast, the corner marked by perforated sign. Follow this diagonal road past a lone oak tree into the town of Montmorenci, crossing railroad tracks again. Continue through Montmorenci, circling the base of a hill. Beyond the town the road forks. Take the right-hand road for the shorter run to Lafayette. Keep straight ahead about 7 miles past Purdue University and over the Wabash river into Lafayette.

In following the second route turn east, left, from Main street in Goodland, 1 block before coming to railroad tracks. Follow the stone road east 8 miles to Remington, where you pick up again the usual route from Chicago to Indianapolis. Continue through Remington and go east another 8 miles to Wolcott. Turn south —right—on Main street in Wolcott, cross tracks, and then keep on going south, with a jog or two plainly indicated, all the way to Montmorenci. Cross tracks and continue to main road at west of town, turn south, left, and go 7 miles into Lafayette, as indicated in the first route. From Lafayette the usual route is followed.—George Ade.

FROM OKLAHOMA TO ST. LOUIS

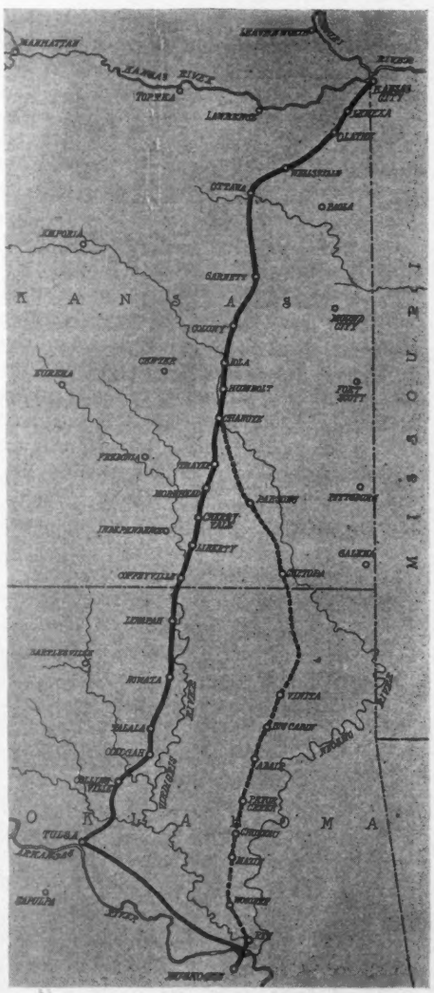
Muskogee, Okla.—Editor Motor Age—Through the Routes and Touring Information department will Motor Age kindly give me the best route from Muskogee, Okla., to St. Louis, Mo.—A. L. Kitto.

From Muskogee go to Rex, thence to Wagoner, through Mazie and Choteau, Pryor, Adair, Harris or Big Cabin; thence to Vinita, then follow the railroad to Parsons. From Parsons to Chanute, Iola, Garnett, Ottawa, Olathe, Kansas City. For complete running directions, Parsons to Kansas City, see page 22 of this issue.

From Kansas City to St. Louis, over the most direct route, according to the Blue Book, is through Independence, Blue Springs, Grain Valley, Odessa, Higginsville, Blackburn, Marshall, Slater, Glasgow, Armstrong, Higbee, Clarke, Mexico, Martinsburg, Wellsville, Montgomery, High Hill, Warrenton, Wright, Cottleville, St. Charles, St. Louis.

Ferguson Brothers, of Coffeyville, Kans., have given Motor Age the following information on a route from Muskogee to Kansas City, as shown by the heavy line in the sketch map on page 21 of this issue: "From Coffeyville to Tulsa the roads are in excellent condition at the present time. Leaving Tulsa follow the Santa Fe railroad for 22 miles to Collinsville, then cross 12 miles where you will strike the Iron Mountain railroad to Talaha, thence on through Nowata, Lenapah and into Coffeyville, Kans. Leave Coffeyville east on Eighth street to end of pavement; then north 10 miles to Liberty; continue north 9½ miles to Cherryvale; thence north to Morehead, Thayer, Earlton, Chanute, Humbolt, Iola, Carylyle, Colony, Garnett, Ottawa; from Ottawa north and east to Wellsville, Edgerton, Gardner, Olathe, leaving the Santa Fe railroad and following the Frisco and electric line to Iennexa, Merriam to Rosedale and into Kansas City, via the Southwest boulevard to Broadway; north on Broadway to Twelfth street; east on Twelfth street to Baltimore avenue, and the Baltimore hotel. The distance from Coffeyville to Kansas City will be found to be 197 miles."

HOOSIER PLAYWRIGHT POINTS OUT BETTER WAY TO INDIANA POINTS



ROUTE BETWEEN MUSKOGEE AND KANSAS CITY

homa City through Boynton, Morris, Okmulge, Sharp, Okemah, Bearden, Tecumseh, Shawnee, Newalla, Marion, Oklahoma City. Then follow the Glidden tour route of 1910, going through Guthrie, Orlando, Enid, Medford, Caldwell, Kans., Wellington, Wichita, Newton, Florence, Emporia, Waverly, Williamsburg, Ottawa, Wellsville, Olathe, Shawnee, Rosedale, Kansas City.

TOUR FROM OKLAHOMA

Sallisaw, Okla.—Editor Motor Age—I am contemplating a journey from here to Chicago on motor cycle, to be accompanied by two motor cars. I want to know the best route, probable time, and what arrangements are necessary to traverse the various states. Kindly explain the condition of the route as near as possible.—A Subscriber.

Leaving Sallisaw, Okla., go to Muskogee, 59 miles, through Vian, Webbers Falls, Warner, Keefeeton, Muskogee, then follow the route outlined in the map on page 21 of this issue to Kansas City. Kansas City to Omaha, 242.3 miles, follow the Glidden tour route of 1910, passing through Leavenworth, Atchison, Hall, St. Joseph. At St. Joseph you have the choice of two routes: One via Omaha, the other over the Ayr line, or short cut across Missouri and Iowa.

From Des Moines go east over the river-to-river road through Altoona, Mitchellville, Colfax, Newton, Grinnell, Brooklyn, Ladora, Marengo, Samana, Oxford, Tiffin, Iowa City, West Liberty, Atalissa, Moscow, Durant, Davenport, 187 miles. From Davenport follow the Blue Book route to Chicago, 172.5 miles, through Moline, East Moline, Hillsdale, Erie, Lyndon, Sterling, Dixon, Ashton, Rochelle, Creston, DeKalb, Geneva, Lombard, Oak Park, Chicago.

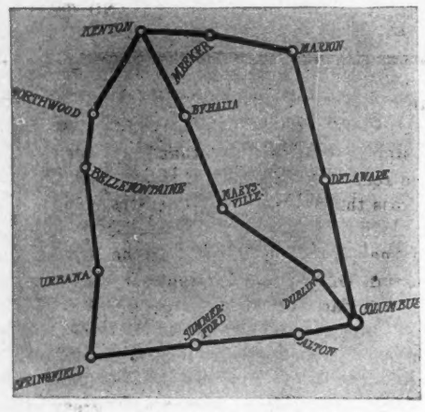
You are exempt from registration in the states through which you will pass. As to the length of time required, this depends largely on how leisurely you desire to make such a trip. The total distance aggregates over 1,200 miles, and 5 days would be the very least time in which you could make this trip. At this time of the year roads will be found to be in good condition.

SUGGESTS NORTHERN ROUTE

Fremont, Nebr.—Editor Motor Age—We wish to call attention to the article in Motor Age of June 15, giving what is purported to be the official route across this state for tourists. This route through southern Nebraska as outlined is no doubt a very fair route and goes through a very beautiful country but we wish Motor Age

to know that the natural route across this state is the one laid out by the forty-niners—those hardy pioneers who picked their way across this state where the obstacles were fewest. Naturally, these old wagon schooners drawn by oxen would seek the best road, and since every portion of Nebraska had been crossed and the roads known generally it can readily be seen that the overland trail up the Platte river valley was not chosen without reason. Perhaps four-fifths of those old timers went up the Platte river valley.

I traveled over this route by motor car recently and for the 300 miles from Omaha to North Platte we did not find



CIRCLE TOUR THROUGH OHIO TOWNS

10 miles of bad road all told and every mile was easily passable in the motor car. I mention this because the thousands of people who will tour across this state in the next few years will be greatly inconvenienced should they not go over the best road and that road is up the Platte river valley and we hope you will give it publicity.—George F. Wolz, secretary Commercial Club; mayor City of Fremont.

A CIRCLE TOUR FROM ALEDO

Reynolds, Ill.—Will Motor Age give me a good route, regardless of miles, from Aledo, Ill., to Cincinnati, O. I would like to go by way of Peoria, Ill., and Auburn, Ind.—George L. Mathias.

Motor Age outlines herewith, with map diagram, what might be termed a circle tour, taking it for granted that you would like to make the return trip over an entirely different route. For the going trip it is suggested that you go via Chicago and Fort Wayne, the route being as follows: Aledo to Davenport, thence to Chicago through Pleasant Valley, Le Clair, Princeton, La Follett, Camache, Clinton, Lyons, Fulton, Morrison, Sterling, Dixon, Franklin Grove, Ashton, Rochelle, Creston, DeKalb, Geneva, West Chicago, Lombard, Chicago. 186 miles.

Chicago to Auburn, Ind., covers 170 miles, through South Chicago, Hammond, Highlands, Hobart, Valparaiso, Westville, Pinhook, La Porte, New Carlisle, South Bend, Mishawaka, Osceola, Dunlap, Goshen, Benton, Ligonier, Wawaka, Brimfield Station, Kendallville, Auburn, Ind.

Auburn to Cincinnati is 197 miles. From Auburn go to Fort Wayne, which is only a short distance, at which point we outline two routes to Cincinnati. The first is via Lima, O., going through Van Wert, Delphos, Elida, Lima, Snyder, Wapakoneta, Sidney, Piqua, Troy, Eaglesburg, Vandalia, Chambersburg, Dayton, Centerville, Ridgeville, Lebanon, Mason, Pisgah, Sharon, Reading, Avondale, Cincinnati. The second route, 177 miles, is Fort Wayne, Bluffton, Pennville, Ridgeville, Winchester, Fountain City, Chester, Richmond, Eaton, O., Hamilton, Cincinnati.

Leaving Cincinnati on the return trip, go to Indianapolis, 113 miles, through the White Water river valley, passing through Cheviot, Miami Station, Harrison, Cedar Grove, Brookville, Blooming Grove, Connersville, Rushville, Arlington, Morristown, Carrollton, New Palestine, Indianapolis.

Indianapolis to Galesburg is 234 miles, through Clermont, Brownsburg, Jamestown, Whitesville, Crawfordsville, Hillsboro, Veedersburg, Covington, Ind.; Danville, Ill.; Catlin, Homer, Urbana, Champaign, Mohomet, Mansfield, Farmer City, Le Roy, Downs, Bloomington, Danvers, Mackinaw, Boyle's Grove, Groveland, Peoria, Hanna, Trivoli, Farmington, Maquon, Galesburg, then to Aledo.

You are referred to the Blue Book which contains complete running directions, and many alternate routes covering this section.

ROUTE FROM IOWA TO PLANO, ILL.

Clarion, Ia.—Editor Motor Age—What is the best route from Clarion, Ia., to Plano, Ill.?—J. A. T.

Leaving Clarion go through Woolstock, Webster City, Blairsburg, Williams, Wilkie, Alden, Iowa Falls, Ackley, Austinville Station, Arlington, Parkersburg, New Hartford, Cedar Falls, Waterloo. This portion of the route, Webster City-Waterloo, is over what is known as the Hawkeye Highway. From Waterloo, it is suggested that you go to Cedar Rapids through Washburn, La Porte, Mount Auburn, Vinton, Shellsburg, Palo, Cedar Rapids; thence through Marion, Mount Vernon, Lisbon, Mechanicsville, Stanwood, Clarence, Bennett, New Liberty, Maysville, Central Park, Davenport. From Davenport go to Plano via Princeton, Ill., passing through Moline, Brier Bluff, Geneseo, Sheffield, Wyanet, Princeton, Dover, Le Moille, Mendota, Somonauk, Sandwich, Plano. Distance, approximately, 425 miles. For complete running directions and other valuable data you are referred to volume 4 of the Blue Book.

OHIO CIRCLE TOUR

Kenton, O.—Editor Motor Age—I would like Motor Age to give me a route from Kenton, O., to Columbus, O., via Marion and return via Marysville, also from Kenton to Springfield.—J. H.

Leaving Kenton go straight east through Meeker and Big Island to Marion. The route from Marion to Columbus takes you through Norton and Delaware. Returning to Kent by way of Marysville takes you through Marble Cliffe Station, Dublin, Marysville, Somersville, Byhalia and Mt. Victory. The Kenton-Springfield-Columbus leg takes you through Northwood, Belle Fontaine, West Liberty, Urbana, Springfield, Vienna, Somerford, Lafayette, Alton and Columbus.

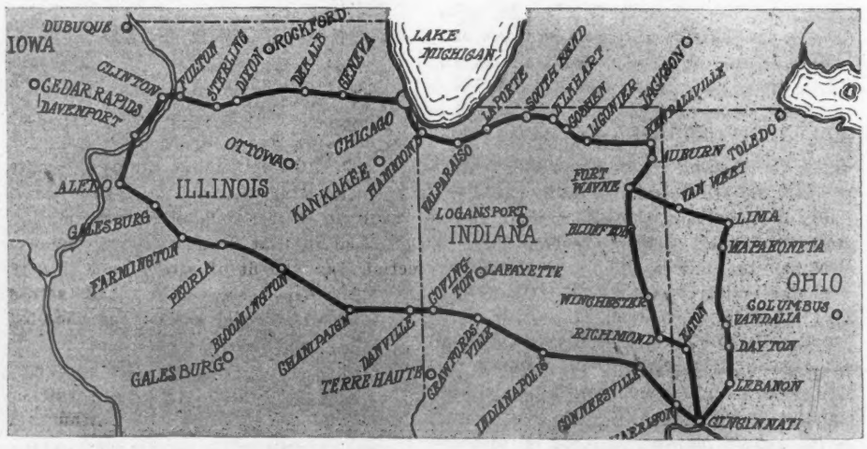
PARSONS-KANSAS CITY INFORMATION

Parsons, Kansas—Editor Motor Age—Through the Routes and Touring Information department will Motor Age give me a good route from Parsons to Kansas City and return, also to Pittsburg and return, and Coffeyville and St. Louis and return.—M. H. Robinson.

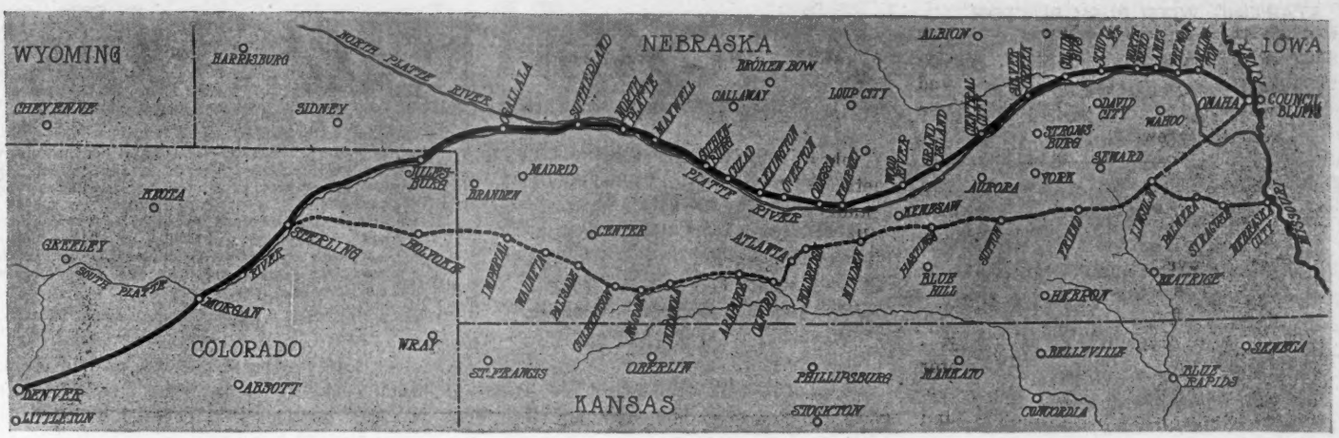
Route from Parsons to Pittsburg, Kans., is through Laneville, McCure, Monmouth, Cherokee, Pittsburg. The Coffeyville-St. Louis route is outlined in the communication headed "From Oklahoma to St. Louis," on page 21 of this issue, and is also shown in the sketch map on page 21.

FROM PARSONS TO KANSAS CITY

Parsons, Kan., to Chanute, 36 Miles—Starting at garage at 1804 Washington avenue one block west; north on Central avenue to church; one-half block west; north three blocks to ice plant; west one-half block across M., K. and T. tracks; north 3 miles to county line; jog west to first road 1/10 mile; 5 miles north; 5 miles west; 1 mile north into Galesburg. West out of Galesburg three blocks, crossing railroad track;



A CIRCLE TOUR THROUGH CHICAGO AND CINCINNATI



ROUTES BETWEEN OMAHA AND DENVER UNDER DISCUSSION. THE SOLID LINE IS THE NORTHERN ROUTE AND THE DOTTED LINE THE SOUTHERN TOURING ROUTE

1 mile north, crossing railroad track; 7 miles west into Thayer. North on west side of railroad track 14 miles into Chanute; east on Main street to garage.

Chanute to Iola, 24 Miles—North on Hilard avenue to end of pavement; west across railroad track one block to first road; north 2 miles to end of road; 1 mile west, following telephone line; north 2 miles into Petrolia. West out of Petrolia four blocks; one block north; west 1 mile to second road; 2 miles north crossing cement bridge; 1 mile east; 2½ miles north crossing big bridge; 1 mile east into Humboldt. East on Main street to within one block of railroad track; north to end of road about six blocks; east to east side of railroad track; north ½ mile to end of road; east ½ mile, following telephone line; north 4½ miles, crossing railroad track; east on stone road ½ mile; 1 mile north; angle north and east ¼ mile; north 1 mile to Main street; one and one-half blocks east to garage.

Iola to Garnett, 30 Miles—One block north from garage; east to end of brick pavement; north following telephone line 1 mile; 1 mile east; 10 miles north into Colony. Follow on right side of railroad track to Welda. West ¼ mile; north 3 miles to big barn on right side of road; east ½ mile, crossing railroad track; angle north and east across field ½ mile to main road; ½ mile north; ½ mile east; north to end of road; ½ mile east; 1 mile north; ½ mile east; ¼ mile north; ¾ mile east into Garnett.

Garnett to Ottawa, 25 Miles—West ¾ mile to telephone line; 10 miles north, going by rock crusher on right hand side, also going ¼ mile east of Princeton; ½ mile west; ¼ mile north; ¼ mile west; 8½ miles north, following main road into Ottawa.

Ottawa to Olathe, 45 Miles—North from river bridge three blocks to grocery store on left hand corner; 7 miles east to white school house on north side of road; 1 mile north; 1 mile east; 2 miles north; 2 miles east to red band telephone line. Follow red band telephone line all the way into Olathe 5 miles north; ½ mile east; 2 miles north; along edge of Wellsville; 3½ miles east; ¾ mile north to Edgerton. One block north from State bank; north and east 1 mile, following left side of railroad tracks; ½ mile east; 2 miles north; 8 miles east, going through Gardner; 4 miles north to white church; 1 mile east, crossing railroad track; north 1 mile into Olathe.

Olathe to Kansas City, 27 Miles—East out of Olathe on south side of square 1 mile to end of road; one block north; 12 miles due east to Martin City. North 1 mile on east side of railroad track; ½ mile west, straight north on main road to Fortieth street, Kansas City; east three block to Grand avenue; north on Grand avenue to business district.

RIVALRY ON NEBRASKA ROUTES

It is questionable if keener rivalry on the selection of cross-state route can be found anywhere than that existing in the state of Nebraska. The route from Omaho, Nebr., to Denver, Colo., is the one questioned. There are practically two routes, the north road, if the term may be used, following the Platte river valley by way of Fremont, Kearney, Grand Island, North Platte, Julesburg, Sterling, Fort Morgan, Denver. The southern, if it so may be called, is through Omaha, Lincoln, Sutton, Hastings, Oxford, McCook, Imperial, Fort Morgan, and then to Denver.

The map on this page illustrates both routes and herewith are communications bearing on the respective merits of these routes. The total mileage between Omaha and Denver by the north route is 611.2 miles. The distance by the southern route is given as 563.9 miles. A description of the southern route was published in Motor Age June 15, 1911, page 27.

FAVORS SOUTHERN ROUTE

Sutton, Nebr.—Editor Motor Age—Regarding the routes from Omaha to Denver, I cannot see but that the southern, or Omaha-Denver transcontinental route is the only satisfactory one. This is the only route across the state where practically no sand is encountered. The most direct route is from Omaha to Denver and passes through Lincoln, the capital of the state.

The state of Colorado, through its highway commission, is building a road as indicated on the map to connect with this Omaha-Denver transcontinental route at Holyoke and Lamar. Thus we have the efforts of both states centered on this route to make it a good road. The route is now marked the entire distance by signboards, guide posts and painted poles. Already, printed guides have been issued giving the itinerary of the route.—J. E. Davis, president Omaha-Denver Good Roads Association.

THE OMAHA-DENVER ROUTE

Kearney, Neb.—Editor Motor Age—I observe in Motor Age of June 15 a statement from the secretary of the Omaha-Denver Good Roads Association giving a so-called official public highway route across this state from Omaha to Denver. I desire to correct some of the information contained in that statement, for the protection and benefit of strangers who may have occasion to travel overland across this state and wanting the most pleasurable and perfect good roads route.

The only route that ever has been officially designated across this state was selected by the 1909 Glidden tour pathfinder. That selection was made after the various routes had been investigated. The route extends from Omaha up the Platte valley all the way to Denver; and it is strictly a water grade, following the old Overland trail. It is safe to say that 75 per cent of the roads of the route up the Platte valley across this state are better in their natural condition than it ever would be possible to make some portions of the so-called official Omaha-Denver route referred to. It is a fact that cannot be gotten away from that there is at least 100 miles of that route so thoroughly sandy and dotted with sand hills that they can not make it a first-class road without very great expense, notwithstanding the statement in the issue of the 15th inst. to the contrary.

In Motor Age of March 16 and 23, this year, is quoted what is the best and the only official route across this state, which is the Glidden route.—C. E. Oehler, secretary Kearney Commercial Club.

KALAMAZOO-ADRIAN AND RETURN

Kalamazoo, Mich.—Editor Motor Age—Will Motor Age outline the best route with distances for a motor trip from Kalamazoo to Adrian, Mich., thence to Bluffton, Ind., and back to Kalamazoo?—H. F. Siewert.

Leaving Kalamazoo go to Jackson, 66 miles, through Galesburg, Battle Creek, Cresco Station, Albion, Jackson. From Jackson go to Tecumseh, 33 miles, through Napoleon, Brooklyn, Tipton, Tecumseh; then continue to Fort Wayne, 115 miles, through Adrian, Lyons, Ottokee, Wauseon, Napoleon, Okalona, Defiance, Brunersburg, Hicksville, Maysville, Fort Wayne. Bluffton is only 23.8 miles south of Fort Wayne over good gravel road.

Returning to Kalamazoo from Bluffton, go to Fort Wayne, thence through Huntertown, Laotta, Swan, Avilla, Kendallville, Wolcottville, Valentine, La Grange, Lima, Sturgis, Mendon, Kalamazoo, 123 miles.

Should you desire to return by the way of Elkhart, from Fort Wayne go to Noblesville, Wolf Lake, Kimmel Station, Ligonier, Benton, Goshen, Dunlap Village, Elkhart, Bristol, Vistula, White Pigeon, Three Rivers, Moore Park, Schoolcraft, Kalamazoo. Complete running directions may be found in volume 4 of the Blue Book.

The Readers'

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired.

STARTING WITH PUSH BUTTON

CABERY, ILL.—Editor Motor Age—Please state through the Readers' Clearing House whether or not it is detrimental to start an engine equipment with a Remy ignition with the push button as used with the system.—Charles E. Christ.

No, it is not detrimental to start the engine on the spark by using the button. The start of an engine even on the spark is not a sudden or instantaneous one, but a comparatively slow one, even slower in the majority of cases than when cranking the motor, because the compression and consequent explosive pressure in the starting cylinder is considerably lower than that in the starting cylinder of a motor which is started by cranking. It must be borne in mind that the gases that furnish the power in the motor cylinder are of a very elastic character.

FRONT SEAT IS HOT

Craik, Sask.—Editor Motor Age—Through the Readers' Clearing House will Motor Age kindly answer the following questions:

1—I own a 1911 model 54 Overland car and find that the driver's portion of the car gets uncomfortably hot at times. Is there any means or attachment whereby one can ventilate so as to reduce the discomfort?

2—Can the lamp of a car be lighted from a Bosch dual system of ignition? If so, please give diagram and explanation.

3—Is there any means of locking the engine hood, so as to prevent inquisitive meddlers from opening it?

4—The water of the cooling system heats very quickly and loses about 1 gallon in 10 miles of driving. There is no leak, and I feel sure the mixture and ignition is all right. The car is new, which might account for it.

5—I would like a good formula for a nickel-cleaning mixture.—Bubastes.

1—In the July 6 issue of Motor Age, on page 24, was shown the means employed by the Franklin company for ventilating the front seat portion of their cars; and it is quite possible that you may be able to conveniently have a similar arrangement made for the dash of your car. If your dash will permit, cut a hole in either side of it, cover the holes with fine copper screen on the outside and fit a little metal door with a catch on the inside, and with perhaps a spring hinge to hold it open when desired. If you do not wish to do this, you might arrange a strap between the sill and the door, so that the door could be held partially open while the car is en route. This means of ventilating is being employed with much success by several Overland owners.

2—No. The Bosch magneto cannot be used for lighting the lamps.

3—Two methods of locking the hood of a motor car are illustrated and described on page 26 in the July 6 issue of Motor Age.

4—Your overheating undoubtedly is due to too rich a mixture, which most probably can be remedied by simply having the carbureter properly adjusted. To adjust the model L carbureter turn the slow speed adjusting knurl to the right until it stops, then open about a turn and a half; open the throttle half way and start the engine. Close the throttle, setting it with the low speed adjusting screw until the engine is running at the slowest desired number of revolutions. By turning the slow speed adjusting knurl to the right or left the correct mixture at slow speed is obtained. When this has been determined, open the throttle until the little roller on the needle valve lever stands in the center of the first dial. By turning the cam spring adjuster between 1 and 3 the correct mixture will be obtained for intermediate speed or half-open throttle. Next, open throttle full, and by turning the cam spring adjuster on the second dial between 1 and 3, obtain adjustment for open throttle. If the mixture appears too rich before making adjustments on the second dial, replace the air valve spring with one of slightly less tension. Should there be any air leaks in the intake manifold or past the gaskets of its connections, it will be impossible to properly adjust the carbureter so that the motor will run slowly without misfiring. If any air leaks are suspected the connections may be tested while the motor is running and misfiring, by winding a cloth saturated with gasoline around them. Should a leak be present misfiring will cease as soon as it is covered by the saturated cloth.

5—To clean nickel-plated objects, dip them for a second or two in a 2 per cent solution of sulphuric acid, rinse in running water, and finally with a mixture in equal parts of distilled water and alcohol. For a polish ordinary rouge is used by nickel-platers.

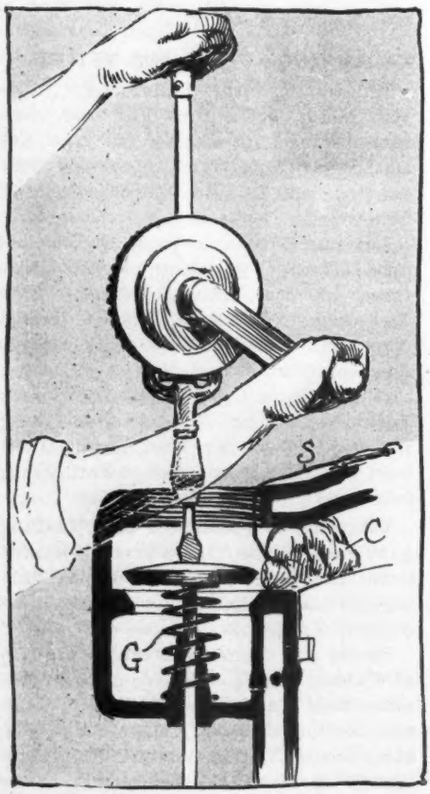


FIG. 1—GRINDING A VALVE

QUESTIONS ABOUT THE FORD

Paducah, Ky.—Editor Motor Age—Kindly answer the following questions through the Readers' Clearing House:

1—I have a model T Ford, 1910 model, which has a miss I cannot locate. This car will miss quite a good deal on low, but not very much on high. Sometimes when running on high it will miss for a short distance, but it always seems to be missing on only one, and I cannot run it slow at all. This car has just been overhauled, and I have new valves put in, also pushrods, piston rings, timer, new platinum in the coil and also rewired the car. Also bought a new set of plugs. This car will miss on the battery as well as on the magneto. What is the trouble?

2—Does an exhaust horn cause the valves of an engine to carbonize quicker than they ordinarily would?

3—Why is it that my carbureter smokes lately whenever I crank the car?

4—What is the weight of the Regal 30 and what is the fastest time it has ever made?

5—What is the best way to grind a valve, and does Motor Age think it is possible to put an automatic oiler on a 1910 model T Ford?—F. D. Rodfus.

1—Since you state that your motor has just been overhauled it seems most probable that your trouble is due to an error in replacing the valve springs, the exhaust valve springs having perhaps been placed on some of the intakes and vice versa; or, some of the exhaust valve springs are too weak and should be replaced with stronger ones. Exhaust valve springs are as a general rule much heavier and stiffer than the intake valve springs, it being necessary that the exhaust valve springs be heavy enough to keep the valves closed during the suction stroke, otherwise air or burnt gases will be drawn in and the incoming charges spoiled, with misfiring as a result, and perhaps the

Clearing House

EDITOR'S NOTE—To the Readers of the Clearing House columns: Motor Age insists on having bona fide signatures to all communications published in this department. It has been discovered that the proper signature has not been given on many communications, and Motor Age will not publish such communications, and will take steps to hunt down the offenders of this rule if it is violated.

smoking at the carbureter of which you complain.

2—It is quite possible that the exhaust horn might have a tendency to cause quicker carbonization of the valves, due to the back pressure, but unless the horn operating mechanism is such, or so arranged that the exhaust of the gases through the muffler is cut off, it should hardly give rise to such trouble.

3—It is quite possible that the new rings fitted have not as yet been properly worn in and oil is getting past them in excessive quantities. This also might be the cause of the excessive carbon accumulation on the valves. And these excessive carbon accumulations on the valves might in turn be the cause of poor compression and of the misfiring complained of in inquiry No. 1.

4—The Regal 30 fully equipped weighs 2,400 pounds. As the Regal car does not compete in racing events Motor Age has no official records of its fastest time. The Regal sales agents, however, claim a speed of 55 miles per hour for their stock cars.

5—When misfiring or a loss of power, due to poor compression, indicates that the valves of a motor need grinding, the valves should be removed, one at a time, so as not to get them or their springs mixed up, and ground in as follows: Remove the valve and plug the opening between the cylinder and valve chamber with a cloth C Fig. 1, having previously tied a string S to the cloth which is attached to some external portion of the motor, or raised the piston to the top of the cylinder so that the cloth will not fall into the cylinder. This is to block up the entrance to the cylinder and prevent emery, or whatever abrasive is used, from getting in and scoring the walls of the cylinders and pistons. If emery and oil is to be used in preference to the specially-prepared valve-grinding compounds on the market, to grind in a valve which is badly pitted it is well to begin with rather a coarse grade of emery. Apply a coat of cylinder oil to the face or seat of the valve distributing it with the tip of the finger; then dip the oily finger into the emery and apply that which adheres to it to the seat of the valve. Be careful to keep the stem of the valve clean, so that the guide will not be enlarged.

If a screwdriver or plain valve-grinding tool is to be used the operator should hold the valve grinding tool in one hand, take hold of the valve stem with the other, assume as comfortable a position as possible and begin the grinding operation. This consists in turning the valve about one-half revolution back and forth on its seat in the cylinder by means of the tool in one hand, and occasionally lifting the valve from its seat and shifting it around with the other When the pits are almost removed, continue the operation with flour of emery instead of the coarser grade and remove the valve oftener, applying more oil and less emery each time until a good seat is obtained all around; then finish up by polishing the seats with oil alone. Kerosene is most effectively used in finishing the seats of a valve and the smoother the finish obtained the less chance for a carbon deposit.

In cases where much valve-grinding is necessary, such as when the seats are badly pitted, or the heads slightly warped, the method of using a breast drill, as shown in Fig. 1, is a most convenient one. Without the use of the spring G, however, the use of the brace and bit or the breast drill would be found quite impractial owing to the fact that both of the hands are required to operate either one; it would be found very unhandy to continually release the hold of one hand to lift the valve from its seat in order to distribute the abrasive or grinding material. One should be careful after grinding in a valve to see that at least 1/64-inch to 1/32-inch space exists between the end of the valve tappet and valve stem, when the valve is closed. Considerable grinding often reduces this space so that unless the valve is readjusted in this respect, when the motor becomes warm and the stems lengthen out or expand a trifle from the heat, the valve will not seat tightly and a loss of compression with consequent misfiring will result. On pages 34 and 35 of Motor Age, issue of April 20, the subject of valve grinding and adjusting is quite thoroughly covered.

It is possible to put an automatic oiler on almost any car, but it would be quite unnecessary on the Ford. If your motor is getting too much oil, which seems the primary cause of all your troubles, remove the baffle plate P, Fig. 2, and thereby reduce the level in the crank chamber. If after doing this the smoking still continues cut a little off the dips on the connecting rods; go easy in this, and remember that it is easier to remove stock from these dips than to replace it.

CANVAS INNER CASINGS

El Reno, Okla.—Editor Motor Age—Will Motor Age through the Readers' Clearing House kindly answer the following questions:

1—What effect will a heavy canvas inner casing, such as laces with a round hard cord, have on inner tubes? Will the rough surface caused by the lace and wrinkles in the flap cut the tube?

2—What, in the opinion or experience of Motor Age, is their usefulness in preserving outer casings by preventing blowouts and punctures?

3—What graphite is preferable to use in connection with grease in gear cases and differential, the flake or powdered, and why?

4—Could oil, removed from the crankcase after being unfit for cylinder lubrication, be filtered and used in gear and differential? If so, how could a suitable filter of small capacity be cheaply made?

5—In using graphite with grease and oil in gears and differential, what proportions will give best results?

6—Would not graphite added to the cup grease improve same for lubrication of spring bolts, etc.?—A Novice.

1—Canvas inner casings of the character described are being very successfully used at the present time without damage to the tubes.

2—Several users of the casings referred to seem to have considerable confidence in their usefulness as a means of preventing blowouts.

3—The flaked graphite is claimed to be the purest and consequently the most desirable.

4—Yes. A suitable filter construction is

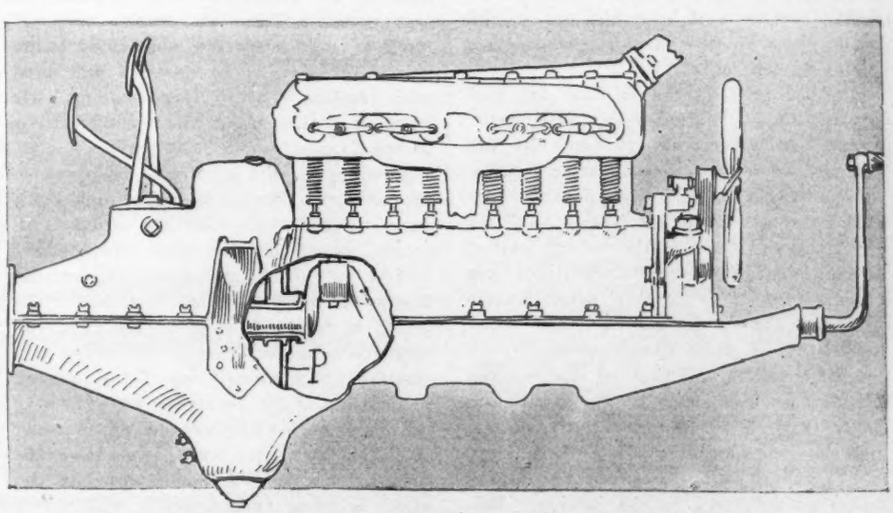


FIG. 2—FORD POWER PLANT, SHOWING POSITION OF BAFFLE PLATE

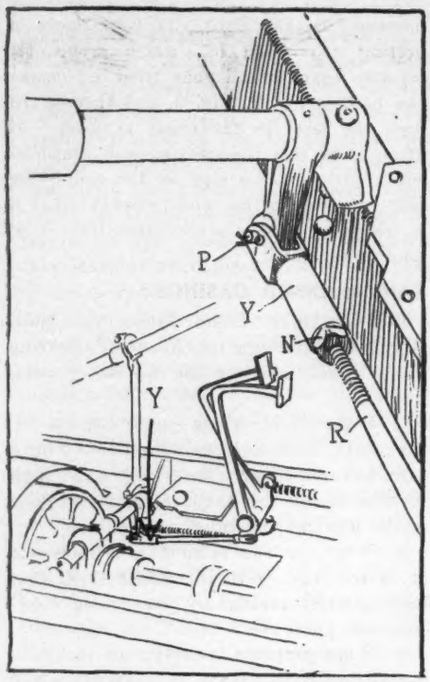


FIG. 5—STAVER CLUTCH ADJUSTMENT

illustrated and described on pages 26 and 27, June 29 issue of Motor Age.

5—A proportion that would give it a thick creamy consistency would, perhaps, be best. This point, however, is largely one of experiment.

6—Yes. If not used in such quantities as to prevent the grease to flow readily to all parts of the bearings.

RUNNING DOWN TROUBLE

Shelby, Mich.—Editor Motor Age—Will Motor Age through the Readers' Clearing House put me on the right track with an E-M-F 30, 1910 model? This car will not run even at slow speeds on high, say, 5 to 7 miles an hour; while running at this speed the motor jerks and holds back and then goes on all right for a while, and then commences to jerk again. At times I fear for the crankshaft, it gives such lunges. I have adjusted the auxiliary air valve on the carbureter in every conceivable position. The valves were ground in 2 months ago; the ignition system is all right, I am sure. I have just put on new spark plugs all around and this does not make any difference.

The car runs fine on medium and high speeds. Couldn't ask for anything better. I had the factory expert here last fall and he said it was all carbureter trouble; that it was not getting enough air. He filed a few notches in the leather auxiliary air valve and for a while the car worked all right, but now is as bad or worse than ever before. No matter what tension springs I use on the air valve the motor still jerks on slow speeds or high. Of course, I understand that no car can run too slow on high, but this car should run easily, say, 5 to 7 miles per hour on high, as I see plenty of E-M-Fs here doing it. The spark being advanced or retarded makes no difference in the jerking. This car has always done more or less popping in the carbureter until it gets warmed up, no matter what air adjustment.—Clifford W. Eader.

Crank your motor slowly for a few seconds and see if the compression is equally good in each cylinder. Should any of the cylinders seem weak it is quite possible that the valves in that cylinder are not seating properly and should be reground. Ill-seating valves will cause misfiring, and, if an intake valve, perhaps popping in the carbureter. If the valves are found to be in good condition, remove the auxiliary air valve from the carbureter by removing two screws which hold it in place. This valve is shown removed in Fig. 4. When this valve has been removed loosen the locking thumb nut N, then screw down the screw S so that the valve V drops off its seat, then hold the valve up against its seat with the thumb and examine the relative height of the springs. The springs should be of such length that the outer spring O be about $\frac{1}{16}$ of an inch longer than the inner spring I. If the outside spring is not long enough it can be stretched and if too long either the inner one can be slightly stretched or a small piece cut off the end of the outer one by laying it on a vise and cutting it off with a cold chisel. With the springs adjusted properly, draw up on the screw S until the valve V barely seats; then tighten up on the lock thumb nut N. The air valve then will be ready for replacement in the carbureter and the motor to start. With the motor running the thumb nut N can be again loosened and the adjusting screw S turned slightly one way or another so that the engine will run best. If this adjustment does not prove satisfactory, it is most probable that your trouble is not in the carbureter, and Motor Age would suggest that a thorough examination of the intake gas manifold connections be made for air leaks. This might be done by saturating a cloth with gasoline and winding it around each connection while the motor is running and missing; should a leak be present misfiring would cease when the opening is covered by the saturated cloth. Should this test reveal nothing the intake manifold itself is to be suspected and should be removed, plugged up at one end and filled with gasoline to see if there are any little holes in it that might admit sufficient air to spoil the mixture.

Troubles of this kind have been caused by having the points of one or two spark plugs farther apart than the others. All points should not be more than either 1-64 or 1-32 of an inch apart, the smaller dimension being the most desirable if the motor is required to run slowly on the magneto. Should none of the above suggestions prove correct, see if the opening and closing of the valves corresponds with the marks on the flywheel. A slip of paper placed between the valve stem and the push rod and moved about while the flywheel is being turned slowly will aid in noting the opening and closing of the valves, as the paper will be seized at the point where the valve begins to open and released when it is closed. The only other possible cause for your trouble that suggests itself is that either the magnets of the magneto are weak and require recharging, or the platinum points of the magneto might require a cleaning or adjustment. The latter, however, seems the least probable.

MAYBE OIL IS TOO HEAVY

Carlock, Ill.—Editor Motor Age—Will Motor Age advise me as to the trouble I am having with a Staver-Chicago 30? When I throw the clutch out the shaft between the clutch and transmission continues to revolve, therefore causing a grinding of the gears in changing speeds. I have cleaned the clutch out with kerosene, but it seems to do no good.—A. R. Moore.

Either you are using too heavy an oil in your clutch or the clutch pedal adjustment is such that you do not throw the clutch out sufficiently to properly release the disks. It would be advisable to try thinning down the oil by mixing a little kerosene with it. If this does not eliminate the trouble, release the pin P, Fig. 3, loosen the lock nut N, then unscrew the yoke Y on the rod R a couple of turns, so that the clutch will be entirely released when the pedal is thrown full forward.

WATERPROOFING TOPS

Columbus, O.—Editor Motor Age—Through the Readers' Clearing House will Motor Age give me some information in regard to waterproofing motor cars tops. The top on my touring car is made of cravenette. It is 2 years old, seemingly in good condition, but leaks freely. Can Motor Age recommend a coating that will waterproof it and still not discolor the fabric?—Robert D. Simpson.

One of the leading motor car top and body manufacturing and repair concerns in the city of Chicago claims that it has tried a number of the so-called waterproofing materials for tops such as yours and

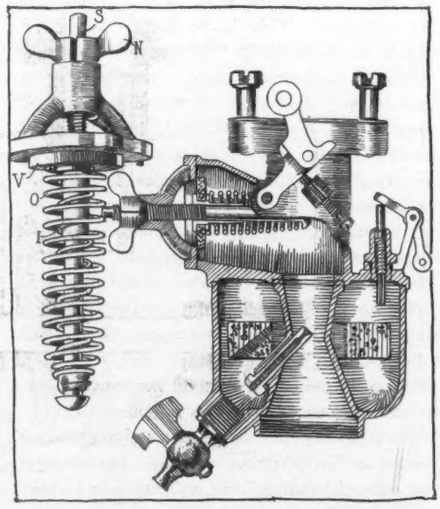


FIG. 4—E-M-F CARBURETER

found none of them satisfactory. If, however, there are any readers who have found a preparation that is successful, information to that effect will be appreciated by Motor Age and its readers.

FINDING PISTON DISPLACEMENT

Parsons, Kan.—Editor Motor Age—Through the Readers' Clearing House will Motor Age kindly answer the following questions:

1—Give me a formula for finding the cubic inches of piston displacement in a cylinder.

2—Would it effect the power of a motor by placing a petcock in the inlet manifold? Would it increase the speed of the motor?

3—Kindly furnish me with information as to driving a car at the rate of 75 or 80 miles per hour on a mile track and to make the turns to avoid skidding.

4—I would like to know which is the faster car, the gasoline or the steam car?

5—What is the proper size steering wheel to use to obtain the best results and how much play should the wheel have? —L. H. Robinson.

1—The piston displacement of a motor cylinder is found by multiplying the diameter of the cylinder by itself, then multiplying the result by .7854, and then multiplying this product by the length of the stroke. A formula in general use for engines having one or more cylinders is—

$D^2 .7854 S N =$ Piston displacement,

D meaning the diameter of the cylinder; .7854 being a constant; S designating the length of the stroke in inches; and N the number of cylinders.

2—It is claimed that greater speed has been obtained in some motors by placing a petcock in the intake pipe, which could be opened when traveling at excessively high speeds. The reason claimed for the gain in speed is that when cool air is admitted to the mixture in the intake pipe the proportion of air in the mixture not only is rendered more correct, but the lowering of the temperature permits of a greater volume being taken into the cylinders, with a quicker and more powerful combustion of the gases in the cylinder as the result.

3—Motor Age does not endeavor to teach anyone how to drive 75 or 80 miles an hour on a mile track so as to avoid skidding. Inasmuch as the best time yet made on a mile track is but about 73 miles an hour, such information could hardly be authentically given. Drivers capable of making these speeds rarely learn to drive by correspondence.

4—The fastest time made by a White steamer was that of the Stanley driven by Marriott at Daytona, which was :28 2-5. Since this time has been made, Oldfield cut the record down to :27.3 with the Blitzen Benz, and Bob Burman now holds the record of :25.4 with the same Benz car and over the same course.

5—A 16 or 18-inch wheel generally is used, although considerable variation in the sizes are to be seen. There should be no more play than is absolutely necessary to permit the wheel to operate easily. The more play the harder to control the car.

TROUBLE WITH THE CONTROL

New Orleans, La.—Editor Motor Age—Will Motor Age kindly answer the following questions through the Readers' Clearing House:

1—The spark and throttle of my Marmon car will not stay in place. The factory sent me new gears and advised me to change the springs back of the friction plunger, but after using the car for an hour or so they loosened up. What is the cause?

2—Has saltpeter ever been used as a carbon remover?

3—What speed should a touring car make fitted with a 4½ by 5 engine and geared 3½ to 1?—D. J. M.

1—If you have changed the springs back of the friction plungers at the lower end of your steering columns as advised by the factory, perhaps you have not screwed in the studs D in Figs. 5 and 6 to give the springs S the required compression. If you will adjust these springs so that the plungers P press sufficiently hard upon the back of the gear sectors, the friction should be great enough to hold your engine control levers as tightly as desired. It is possible that you have not tightened down the lock nuts N on the spring adjusting studs. These nuts must be tight in order that the adjustment may be maintained.

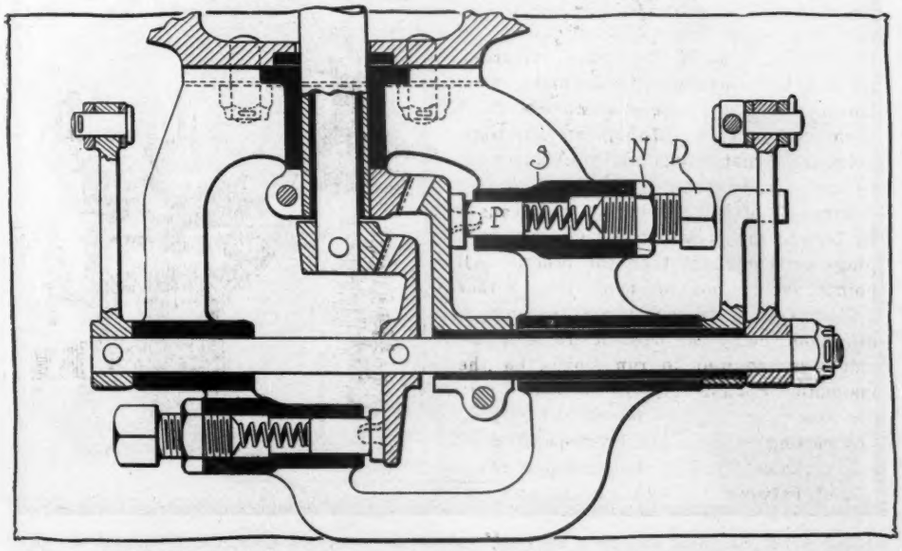


FIG. 5—SHOWING DETAILS OF FRICTION PLUNGERS ON MARMON ENGINE CONTROL

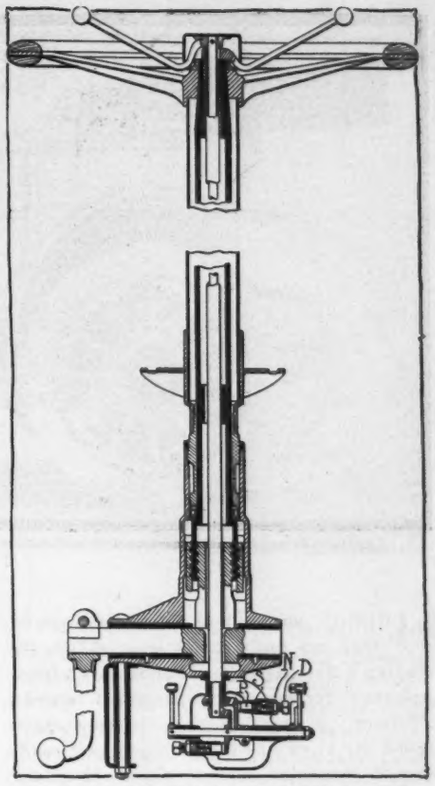


FIG. 6—MARMON STEERING GEAR

2—Motor Age has no data regarding the use of saltpeter for use as a carbon remover.

3—Fifty miles an hour is a reasonable amount of speed to be expected from a motor under the conditions mentioned.

CARBON VS. NICKEL STEEL

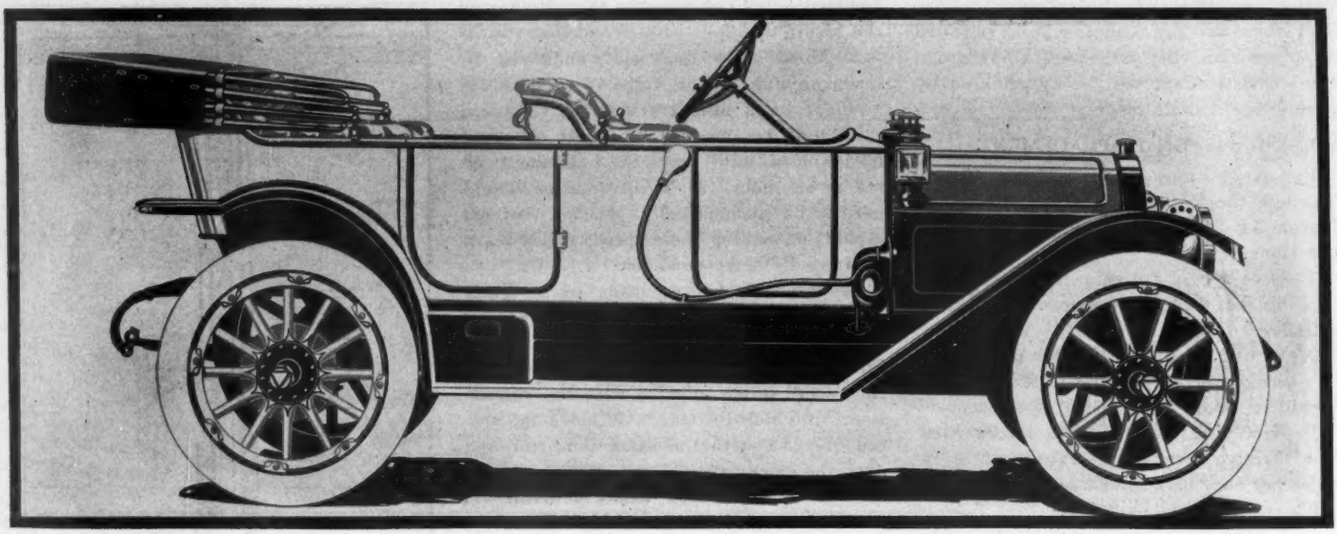
Norway, Ia.—Editor Motor Age—Through the Readers' Clearing House will Motor Age kindly answer the following questions:

1—Why are valves on the motor made with carbon steel stems while the head is made of nickel steel? Is this because nickel steel is expensive?

2—Has Motor Age any data on how nickel steel wears in bearings? Does it wear faster than carbon steel?—Nickel Steel.

1—Carbon steel stems have two advantages over nickel steel stems. They cost less and it is claimed wear better in a cast iron guide. Nickel steel heads are better than carbon steel heads because they do not pit so readily. Cast iron heads and carbon steel stems are considered best for ordinary purposes by many.

2—It is claimed that nickel steel stems do not wear as well as the carbon steel stems, though they are much less liable to break.



THE 1912 HUDSON 33 TORPEDO TOURING CAR

Hudson Has One Chassis

Offerings for 1912 Take In Five-Passenger Car, Torpedo Four, Torpedo Roadster, Speed Car, Limousine and Coupe Built Along Modern Lines

HUDSON motor cars for the season of 1912 are built in six body styles, including a five-passenger touring car, a four-passenger torpedo, a two-passenger torpedo roadster, a racy looking two-passenger speed car known as the mile-a-minute roadster, a limousine, and a coupe. They are mounted upon a single chassis design, having the same mechanical characteristics that mark the 1911 Hudson car.

The Hudson chassis comprises a unit power plant, made up of a four-cylinder en bloc L-type motor, with a bore and stroke of 4 and 4½ inches, respectively, a multiple-disk clutch and a selective gearset, giving three forward speeds and reverse. From this power plant the power is transmitted through a propellor shaft, enclosed in a torsion tube, to a floating rear axle. The frame is of pressed channel steel, mounted on semi-elliptic front springs, and three-quarter elliptic rear ones; the front axle is an I-beam drop forging; wheels are equipped with 34 by 4-inch tires on all models but the mile-a-minute roadster, which has 32-inch wheels, and the limousine, which is equipped with 35 by 4½-inch tires; demountable rims are fitted to the wheels, and the wheelbase is 115 inches for all models except the limousine, which has a wheelbase of 118½ inches. In the torpedo and roadster chassis the power plant sits 8 inches farther back in the frame than in the other models.

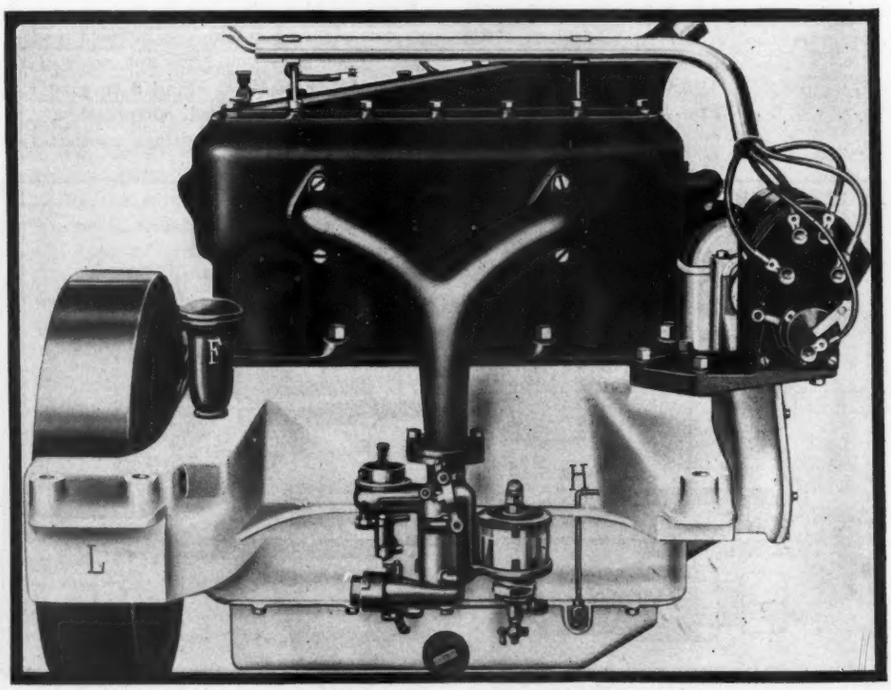
Few Changes in Chassis

To those familiar with Hudson characteristics, the above paragraph will show that, except for an increase of ½ inch in the diameter of the tires, the adoption of demountable rims, and an increase of 1 inch in wheelbase, the chassis remains unchanged.

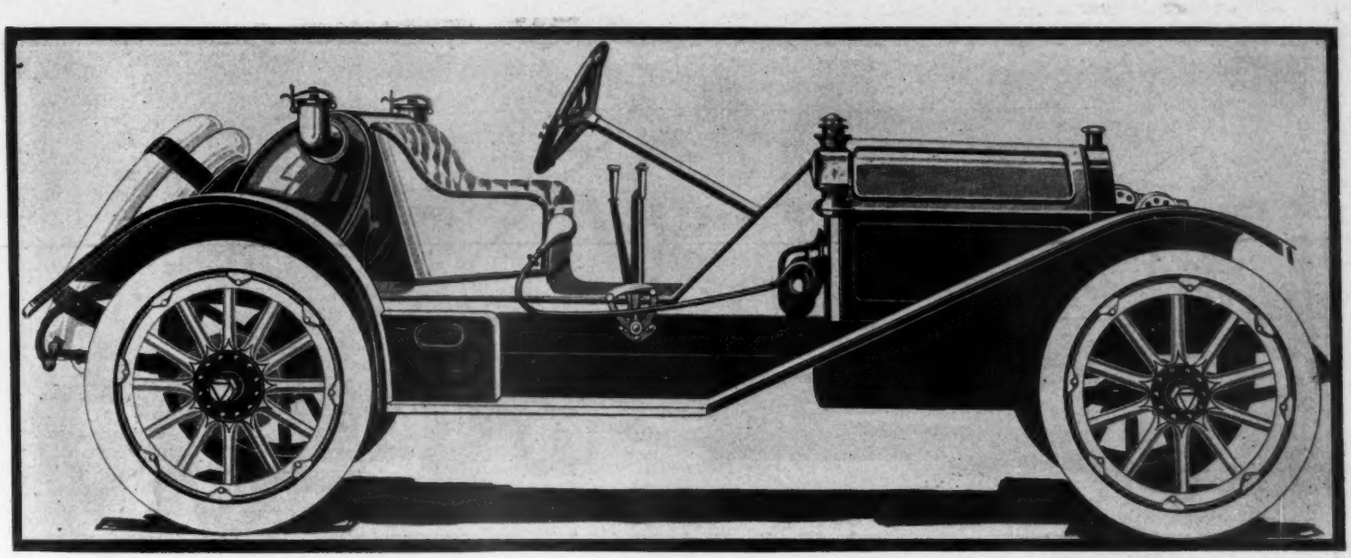
There are, however, many noteworthy refinements in the mechanical details of the 1912 car. In the motor, the valve tappets have been increased in diameter, giving a greater bearing surface and insuring longer life and more silent operation; the tappet guides are held in place by crabs, which are secured to the same studs that hold down the cylinder casting, so that the removal of either the tappets or the cylinders is greatly facilitated; and the valve spring pressure has been reduced, with a consequent reduction in the wear and noise of all the component parts of the valves and valve operating mechanisms and all possible trouble therewith.

Mechanical Characteristics Are Retained

The combination breather and filler pipe of the oiling system has been moved from the front left side of the motor to the right rear leg, so that the try cock for testing the oil level in the oil reservoir can easily be watched and operated while the supply in the reservoir is being replen-



RIGHT SIDE OF 1912 HUDSON MOTOR, SHOWING CONVENIENT OIL FILLER F, OIL TRY-COCK HANDLE H, AND REAR ENGINE LEG L TO WHICH GEARSET IS BOLTED



THE 1912 HUDSON 33 MILE-A-MINUTE ROADSTER

But Six Styles of Bodies

Refinements Include Valve Tappets of Larger Diameter, and Moving of Combination Breather and Filler Pipe—Several Other Slight Changes Noted

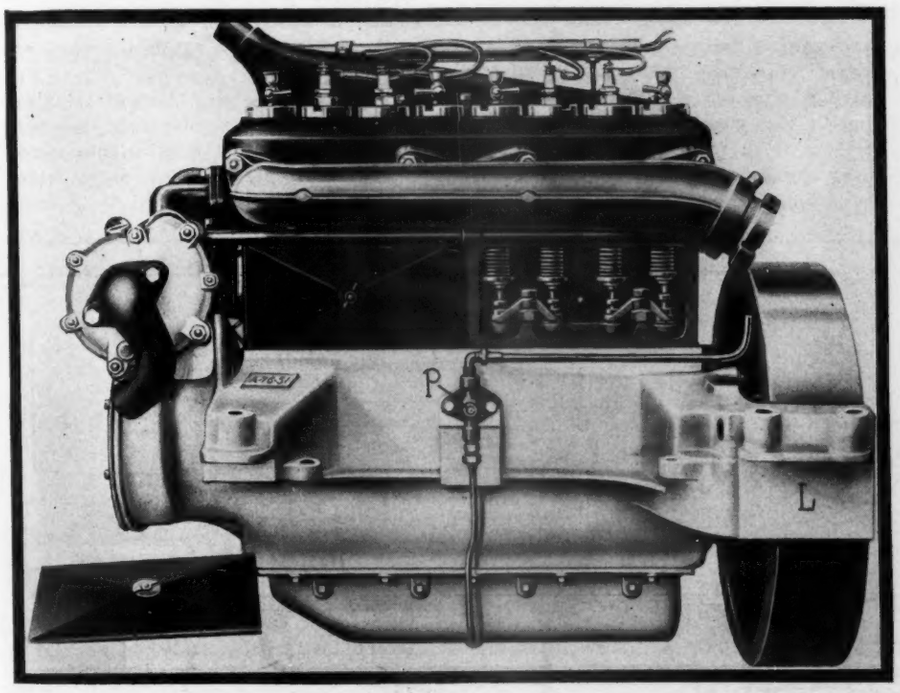
Hudson Unit Power Plant Again Feature

ished. Taps have been fitted into each splash compartment of the crankcase, in order that the entire oiling system may be cleaned out when it is desired to renew the oil supply. A larger pipe is used between the sight feed on the dash and the engine gearcase, through which the oil flows freely and prevents filling up of the sight-feed glass. A large marine type of grease cup, with a ball check valve, is fitted to the water pump, which facilitates lubrication of the shaft and prevents leakage of water through the grease cup.

The crankshaft runs in improved babbitt-lined phospher bronze bearings, for which greater durability is claimed.

A rubber hose connection is employed between the water pump and the entrance to the cylinder jacket to insure proper alignment of the pump when the motor is reassembled after an overhauling. The radiator, which in the 1911 models rests on the front cross member of the frame, rests in the new models on leather pads and is secured directly to the side members of the frame; a plug is conveniently fitted at one side of the radiator at the bottom in front, instead of underneath, to facilitate draining it and prevent water from running into the pan, and though still of the vertical tube design, it has a reinforcement in front that gives the radiator the appearance of a cellular construction.

To complete the changes in the motor, the inlet manifold no longer is water jacketed, but is of greater length so that the carbureter occupies a sufficiently low position to insure a full float chamber on the steepest grades. The carbureter is a new water jacketed type that may be adjusted from the dash.



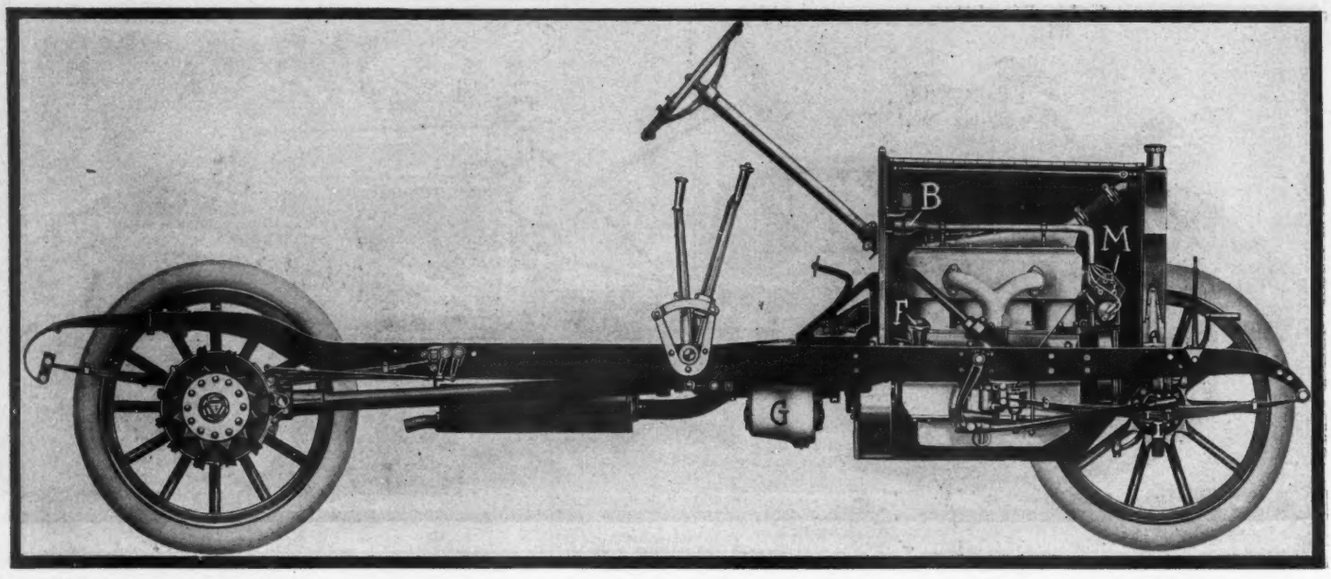
LEFT SIDE OF 1912 HUDSON MOTOR WITH ONE VALVE COVER REMOVED AND SHOWING THE POSITION OF THE OIL PUMP AND PREVAILING ACCESSIBILITY

Clutch Construction

In the clutch, the bronze driven disks with the cork inserts are replaced by steel stampings with cork inserts. The gearset is unchanged, except that a sump has been cast in the bottom of the case, which is designed to catch any sediment or chips that might accumulate therein, and a 1-inch plug is provided at the bottom of this chamber to aid in draining and flushing out the case.

The square end of the propellor shaft has been enlarged from 1½ to 1⅜ inch in diameter, and the rear axle construction is changed and heavier throughout. Provisions now are made for side adjustment of the large bevel driven gear. The large gear has fifty-three teeth instead of forty-eight, so that the use of a larger pinion is permitted and wearing qualities improved, and there is a slight increase in the diameter of the axle drive shafts and the strength of the housing.

The front axle also is a little heavier in construction, and the front wheels are



1912 HUDSON CHASSIS, SHOWING LOCATIONS OF MAGNETO M, OIL FILLER F; RUBBER BOOT B, AND GEARSET G

mounted on new ¾-inch Bower roller bearings, having straight rolls with flanges, instead of the ⅝-inch adjustable cup-and-cone ball bearings previously employed.

To facilitate lubrication of the steering gear a large opening is provided with a spring hinged cover, and to promote silent operation the teeth are eliminated from the steering wheel sector and friction plungers are used in the engine control levers which bear against the edges of the sector. The pedals are drop forgings, which have a more finished appearance. The emergency brake lever is arranged inside of the gear shifting lever, where it is more accessible in case of emergency, and it is so arranged that it does not in any way incommode the use of the gear shifting lever; both levers are inside of the body instead of outside.

The tool box has been removed from under the engine hood and the space devoted to the suspension of a bridge carrying two oil cans, and the tools are carried in a box on the running board.

Twelve spokes instead of seven are used in the hub flanges of the rear wheels. The tire irons are made for two extra tires instead of one, and an extra rim is included in the equipment. Lamps and horn are improved in design and construction, and are, for the most part, covered with black enamel. Door handles are of a neater design, with small thumb levers for opening the doors from the inside; the roadster tank holds 30 gallons of gasoline and 10 gallons of oil; license number brackets are fitted both to the front and rear of the car, and the body is wider and roomier, and the general appearance of the car is more refined.

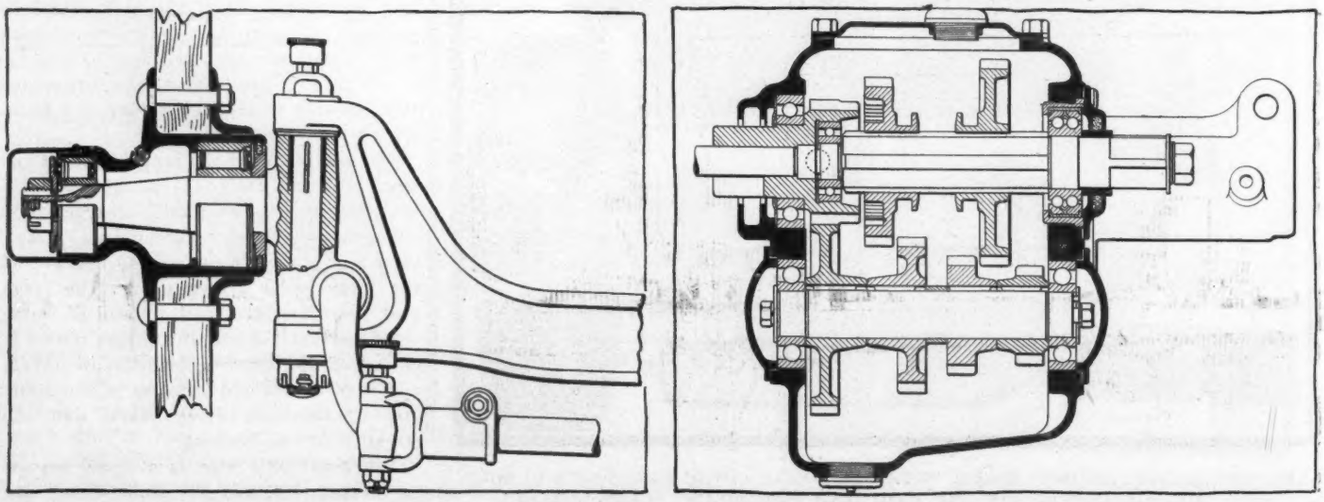
The Mechanical Details

The mechanical details of the Hudson car are very clearly shown in the accompanying illustrations. The four cylinders in one piece are of cast iron with integral waterjackets and valve chambers. This four-cylinder casting is mounted on aluminum crankcase with the crankshaft bearings mounted in two removable end plates. This case has a removable lower portion, which forms the reservoir of the oiling system. The crankshaft is a very heavy drop forging 2⅛ inches in diameter and is mounted in only two large, plain bearings, one at either end, the front one measuring 2⅛ by 3½ inches and the rear one 2⅛ by 4 inches.

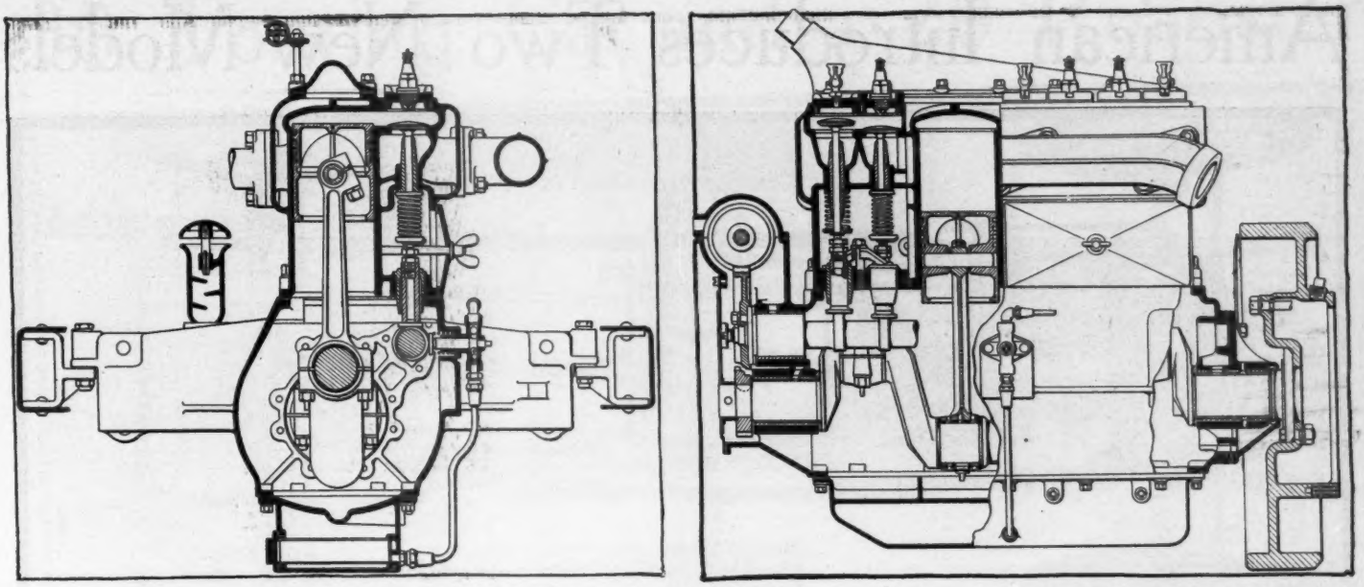
The valves all are on the left side in offset valve chambers and operated from a single camshaft contained within the crankcase. The heads of the valves are 2 inches in diameter, and the valve operating mechanisms are entirely enclosed, so as to be protected from dust and their operation rendered noiseless. The plates which enclose the valve tappets and springs, are very readily removable for inspection or adjustment of the valves, and attention is called to the accessibility of the valve tappets and springs when the plates are removed.

Quietness is obtained in addition to the manner in which the valves are silenced, by the way in which the motor gears are designed, and a heavy stream of oil plays upon them while the motor is in operation.

The lubrication of the motor is by means of a circulating splash system, in which the circulation is maintained by a small



SIDE SECTIONAL VIEWS OF THE FRONT AXLE END AND GEARSET OF THE 1912 HUDSON 33



END AND SIDE SECTIONS OF THE 1912 HUDSON MOTOR SHOWING MANY INTERESTING DETAILS OF CONSTRUCTION

plunger pump, which is operated by an eccentric on the camshaft and which draws oil from the oil reservoir at the bottom of the crankcase, forces it to the sight feed on the dash, from whence it drains through a large pipe into the engine gearcase at the front end of the motor. From this gearcase the oil overflows into the splash compartments of the crankcase proper, where a constant level is maintained. The connecting rods dip into these compartments as they revolve and when the motor is in operation a mist of oil is constantly present within the crankchamber and behind the pistons, that keeps all the internal working mechanisms thoroughly lubricated. The overflow from the splash compartments of the crankcase proper drains back into the reservoir below, where it is strained and recirculated. A trycock is provided to test the oil level in the reservoir, and the handle of it is extended to enable the operator to open or close it conveniently. Grease cups are provided on all spring shackles and at every point requiring grease lubrication.

The cooling system is a very simple one, with large short and direct water connections and whose features comprise a centrifugal pump, a vertical tube radiator and a fan flywheel. The absence of a fan behind the radiator is a notable feature. By using a fan formed by the spokes of the flywheel all fan trouble is elimated. There are no belts to break and there is no danger of getting the hands caught in the fan while adjusting some part of the motor while it is running.

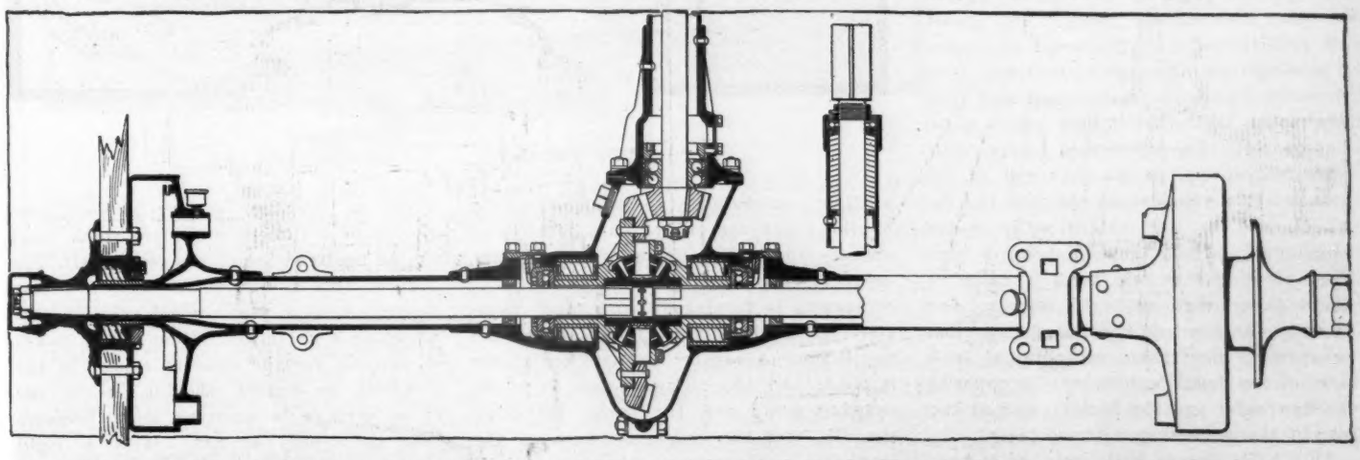
Bosch Duplex Ignition

Ignition is by means of a Bosch Duplex system, with a high-tension magneto, and a storage battery for starting. The battery operates through a small single-unit nonvibrating coil that penetrates the dash and has combined with it a starting button and a key-locking kick switch that is practically flush with the face of the dash. The wiring is carried in a tube, with a rubber boot between the end of the tube and the exposed end of the coil; thus there is little possibility of short-circuiting. The illustrations show the simplicity of the motor attachments. There are few rods, wires or attachments that make cleaning difficult, and there are no corners or pockets where dust can collect.

To add to the accessibility of the motor, it will be noted that the water pump and magneto are mounted on a transverse shaft at the front of the motor, which shaft is driven by spiral gearing from the camshaft gear. This is a most desirable arrangement, as it renders the distributer and circuit-breaker of the magneto most easy to reach when necessary.

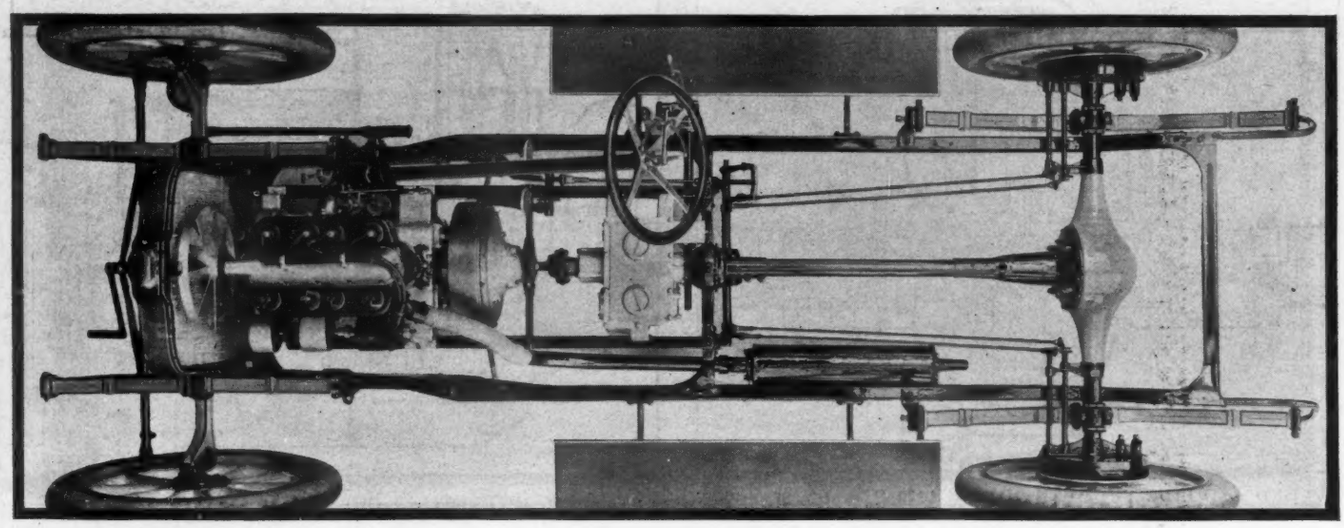
The motor and gearset are a unit. The motor, which has an extra strong crankcase, is secured direct to the side members of the frame. The gearset is bolted direct to the motor, thus making a single unit. This assures alignment at all times between the motor and gearset, and eliminates the need for a universal joint.

The clutch, which is contained within oil-tight compartment of the flywheel, has sixteen disks and should require little attention. The gearset is very short and compact, with its shafts mounted on heavy roller and ball bearings. A single universal joint is employed between the gearset and the propeller shaft. The rear axle is fitted with annular ball and Hyatt roller bearings. Both brakes, which are 2 inches wide and 12 inches in diameter, act upon the rear wheel drums; the service brakes are external contracting, and the emergency are internal expanding.



SECTIONAL VIEW OF THE 1912 HUDSON REAR AXLE SHOWING ADJUSTMENTS OF LARGE DRIVING GEAR

American Introduces Two New Models



PLAN VIEW OF 1912 AMERICAN 30 CHASSIS, SHOWING RELATIVE POSITIONS OF MONOBLOCK MOTOR, INVERTED CONE CLUTCH, SELECTIVE GEARSET, TORSION TUBE AND FLOATING AXLE

EARLY in May the American Motor Car Co. began the delivery of what is known as a model 30 car, designed along the same general lines as the higher-powered machines formerly built by this company, but being a lower-powered car, having a motor with 4.5-inch bore and 5-inch stroke, the S. A. E. rating for which is 32.4 horsepower. This model has been receiving the major attention of the factory since that time, and will soon be supplemented by a smaller brother, namely an American model 20, which will be on the market in a few weeks. The model 20 and model 30 both use the underslung frame, characteristic of American cars since their inception, and used exclusively by the company in all of its present models as well as in any future models that are now designed. The model 20 uses a 3⅜-inch bore and 4.5-inch stroke, its S. A. E. horsepower rating being 18.2. The company is also building its 40 model.

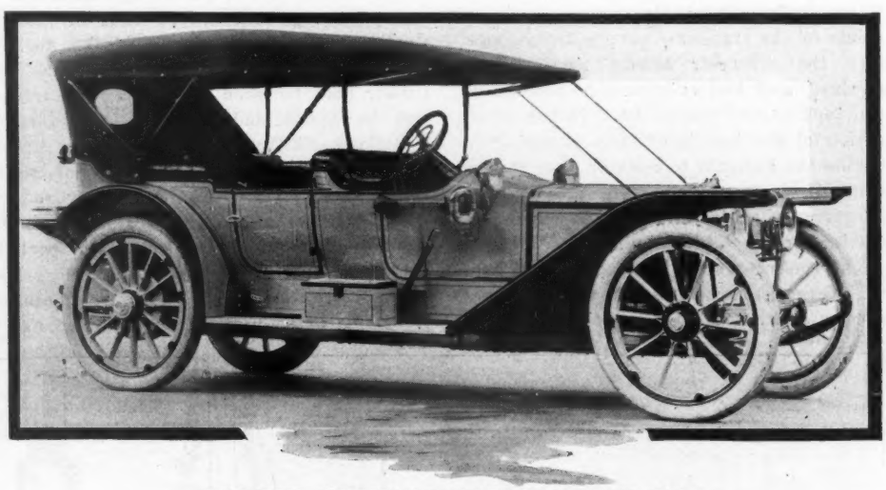
AMERICAN MODEL 20

The American 20 car is illustrated on the opposite page, but none of the chassis or other illustrations belong to this model, all of them being of the model 30 chassis. The model 20 differs quite radically from previous American practice and also from the model 30, in that it uses a unit motor and gearset. The motor uses L-type cylinders cast in pairs; the rear end of the crankcase is extended to embrace the flywheel, and to this extension bolts the aluminum gearbox, the unit being a compact plant carried on what is called a double-three-point support, namely, one point at the front of the motor on a cross member of the frame; one point at each side of the motor approximately opposite the flywheels; and the fourth point at the rear of the gearset on a frame piece.

This little car is built only as a two-passenger roadster, as illustrated, has a 105-inch wheelbase and carries 36 by 3 inch tires all around. It is fully equipped —said equipment including acetylene headlights with tank, oil dash lights, oil tail light, tire carrier with integral baggage trunk carried on the rear, top, etc.

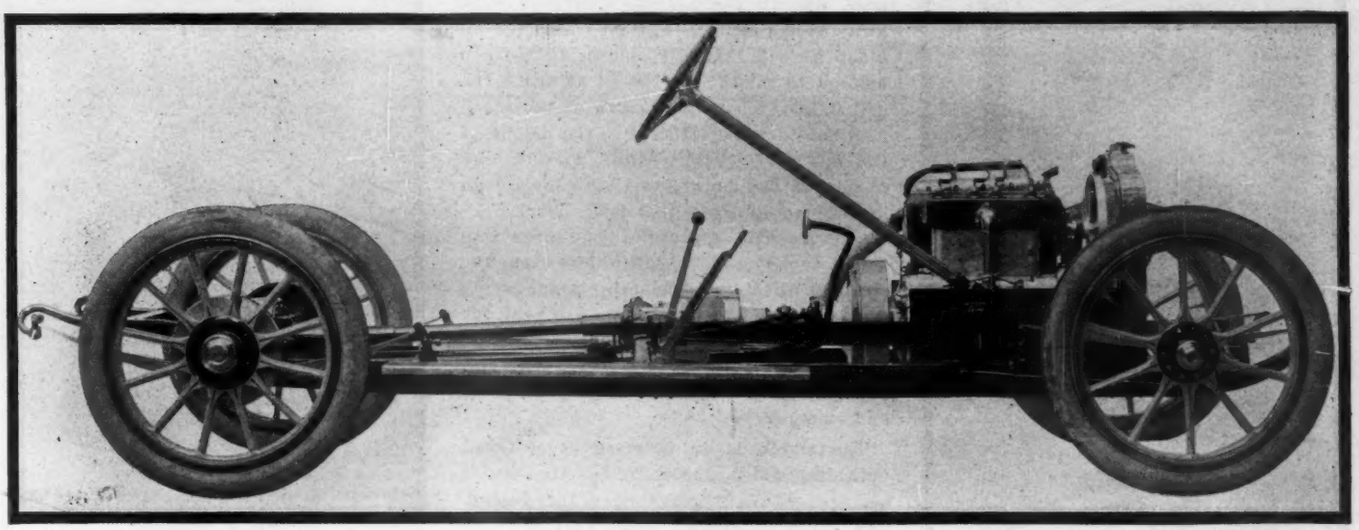
The motor with gearbox is a carefully worked out unit plant. Like the majority of twin-casting motors, it uses a three-bearing crankshaft, with plain bearings; helical timing gears used are carried in an oil-tight compartment at the forward end of the crankcase; valves are located on one side and operated direct from one camshaft carried within the crankcase. The carbureter is furnished with the usual steering wheel controls as well as gasoline regulation. A regular magneto equipment is used; and the oiling system is a circulating pump one, the pump delivering the oil from the crankcase base to the crankcase compartments, where a splash level is maintained. There is one compartment with overflow beneath each connecting rod. Cooling is by a positive water system, the centrifugal pump delivering to the base of the jackets on the valve side.

Between the motor and gearset is the enclosed flywheel containing the cone clutch. The cone, faced with thermoid, is held into the flywheel by three separate springs mounted at 120 degrees to one another around the flywheel circle. In order to get a uniform pressure on all three an equalizer scheme is used consisting of a three-arm spider, which rides on the continuation of the crankshaft. The hub of this spider bears upon a thrust bearing with a semi-conical seating, this affording a universal action, which makes it possible for the cone to center in the flywheel, no matter whether one of the three springs is exerting more pressure than the others or not. With a rigid mounting, the three springs would have to



THE NEW AMERICAN 30 FOUR-PASSENGER CAR

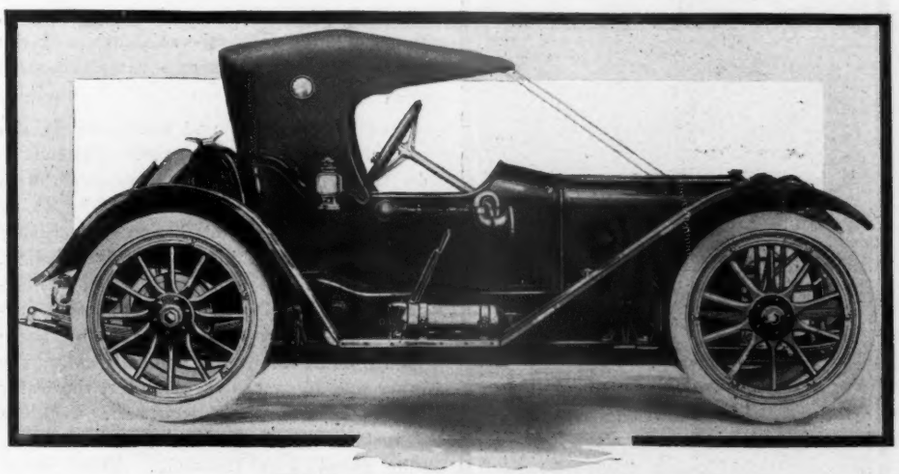
30 Touring Car and a 20 Roadster



SIDE VIEW OF AMERICAN 30 CHASSIS WITH UNDERSLUNG FRAME, MONOBLOCK, FOUR-CYLINDER MOTOR, FLOATING REAR AXLE AND INCORPORATING MANY 1912 FEATURES

the opposite page, but none of the chasses be adjusted to the same tension to get an even clutch engagement. The cone is faced with thermoid and has beneath it six radial plungers backed up with coil springs, these plungers being to insure more gradual engagement.

The gearset is a selective one with three forward variations, controlled by a shift lever working in an H slot. The gearset is a vertical design, the mainshaft above the countershaft, and both carried on ball



THE NEW AMERICAN 20 ROADSTER

bearings. The mainshaft is of round section, with four regularly spaced keys, the two sliding units moving on it; the secondary shaft is of round section with the gears keyed in position. Direct drive is obtained by what is known as dental face teeth or clutches on the master pinion of the set and on the adjacent face of the front sliding gear. Where one shaft of the set is above the other special provisions are needed to prevent leak of lubricant from through the end bearings of the lower shaft; in this case the secondary one. These provisions consist of end plates.

From the gearset the usual type of American transmission of power is seen. The propeller shaft is enclosed and ends at the front in a large ball, which is carried in a corresponding socket on a crosspiece.

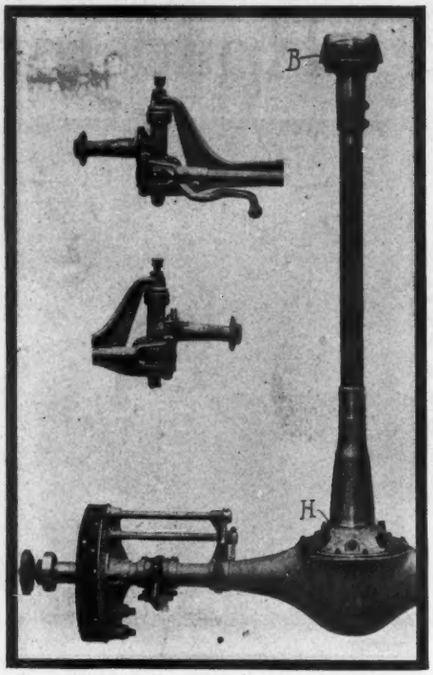
The rear axle, a floating type, has been specially made for this car by the Salisbury Wheel & Mfg. Co. This axle carries two concentric brake drums on each end, the outer 14 inches in diameter and the inner one 10 inches. Both drums are 2 inches wide. Within each drum is an expanding brake shoe faced with thermoid and expanded by a cam action. The expanding shoe is a one-piece band supported at the rear center and expanded at the front center of the drum, the usual precautions to prevent dragging of the drum being taken. The axle housing is a steel casting to contain the differential, and into this are pinned and brazed the steel tubes containing the drive shafts. Spring seats are revoluble on these tubes.

The model 20 running gear has its characteristics. Heretofore all other American models have employed a subframe, rather a hyperframe, it being higher than the wide members of the mainframe. On the 20 this is not employed, the motor resting direct at either side in small stamped brackets riveted into the mainframe channels. A complete set of semi-elliptics support the frame, the front ones 37.75 inches long, the rear pair 47 inches.

THE AMERICAN MODEL 30

The new model 30 is illustrated on this and other pages. Like its little brother, the 20, it is made in but one model, that being, however, a four-passenger car with 117.5-inch wheelbase and 37 by 3.5-inch tires. In a word it differs chiefly from other American models in that it uses a four-cylinder monoblock motor, with T-head cylinders, intake valves on the right and exhaust valves on the left. Back of the motor comes the inverted cone clutch in the fly wheel, followed by the three-speed selective gearset and enclosed propeller shaft communicating with a floating rear axle. The car is regularly equipped with demountable rims, the equipment including one extra rim, together with rim carrier on the rear of the body.

The motor is typical of the monoblock type in that both intake and exhaust manifolds are formed integrally with the cylinder casting. For later models the detached intake manifold has been adopted, it allowing of removing the manifold in case of contest events. The crankcase is a two-part aluminum casting, the upper



TORSION TUBE AND REAR AXLE ON THE NEW AMERICAN 30 CHASSIS

half with four integral legs for the motor support, the lower half forming an oil reservoir. On the right side is the Rayfield carbureter; on the left side the water pump in front and the magneto on the rear and driven through a continuation of the pump shaft. The housing of the centrifugal water pump is integral with the upper half of the crankcase, and the water pipe from the pump is a coreway in the crankcase extending horizontally along in the side of the case to opposite the space between the third and fourth cylinders, where there is an upward opening between the valve lifters. From this opening a copper pipe leads the water to the exhaust valve cage jacket, the copper pipe being hidden by the cover for the exhaust valve springs.

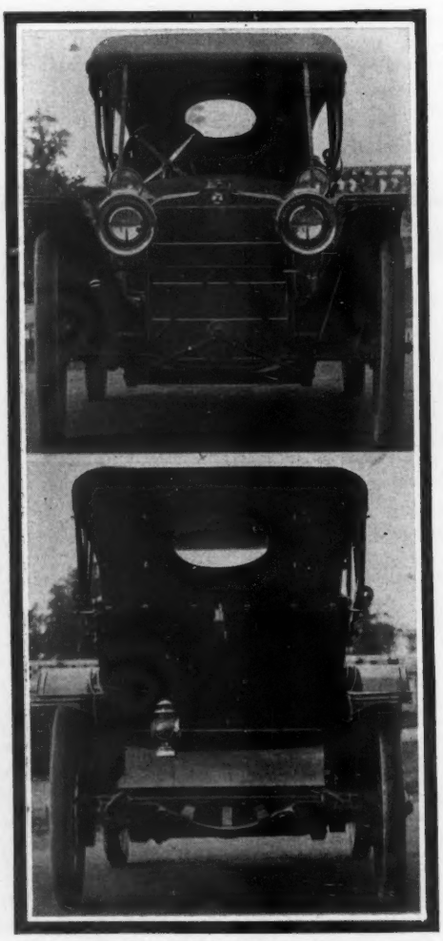
Internally the motor is a characteristic 1912 design. The crankshaft, contrary to practice in monoblock motors, is carried on three bearings of the following sizes: Front, 3 inches long; center, 2 inches, and rear, 3.5 inches. All three are 2.5 inches in diameter. These bearings are bushed with Parsons white metal, formed by die casting. The camshaft is carried on two bearings, also bushed with this metal. Helical timing gears employed are carried in a separate compartment at the front end. The crankshaft pinion is steel, and the camshaft and pump gears bronze. Both of the camshaft gears bolt to flanges on the shafts. Valve lifter rods are adjustable at their upper ends, and at their lower ends are V shaped to bear upon the cam instead of carrying the conventional roller to bear upon the cam.

Motor lubrication is by a straight splash system without pump. Into the aluminum base of the crankcase is put a steel pan, which contains the oil for the splash, into which the scoops on the lower ends of the connecting rods dip. These scoops are fairly long, and the oil scooped up by them enters the lower connecting rod bearings, due to the bearing cap being cut away at the center. The length of the oil scoop is such that the connecting rod cap has not to splash into the oil at any level, and it is owing to the length of the scoop that considerable latitude in the height of the oil level is permissible without any danger of the motor smoking with a high level or going dry with a lower level.

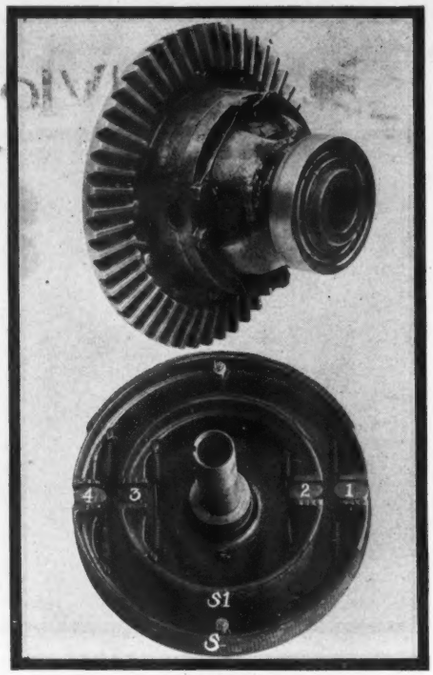
The Rayfield carbureter has three controls, namely, the throttle lever on the steering wheel, an accelerator pedal acting on the throttle and a dash adjustment for raising or lowering the needle valve.

Ignition is by a Bosch dual set with coil and storage battery for starting purposes and emergencies.

The clutch is an inverted cone, faced with thermoid, there being six radial springs with plungers under the facing. The cross or rocker shaft carrying the yoke for disengaging the clutch is carried at each end between the ends of two horizontal set screws, these screws being in brackets carried on the frame. By these screws this rocker shaft can be moved bodily to or away from the flywheel, and the disengaging yoke kept so that the arms spanning the clutch collar are vertical at the point of most work, this being a special



FRONT AND REAR VIEWS OF THE NEW AMERICAN 30, FOUR-PASSENGER CAR



DIFFERENTIAL AND BRAKES ON THE NEW AMERICAN 30 CHASSIS

efficiency factor. Between the clutch and gearset is a universal joint with a telescopic action to allow for clutch disengagement. The cubical-shaped aluminum gearbox is supported at three points, two in front and a central one at the rear, the rear support taking the form of a cast bracket which bolts to the end of the gearbox and forms the socket portion of the ball-and-socket support for the front end of the torsion tube. The set is a horizontal desizn, both main and secondary shafts being in the same horizontal plane, it gives three forward variations, and the gears are made of chrome vanadium steel with five pitch.

The torsion tube and rear axle details are illustrated on this page. The ball B on the front end of the torsion tube is shown, as also is the casting H in which the differential is bolted, and this casting in turn anchored into the axle housing, which is a one-piece stamping. The differential is a bevel gear type. The axle carries double brake drums at each end, these drums being arranged concentrically, the inner one 10 inches in diameter, the outer one 14 inches. The drum band width is 2 inches. Each brake is an expanding shoe faced with thermoid. These shoes are illustrated herewith. Each shoe is made in halves held together only by the coil springs shown. Between the ends of the halves at one side are two cams, 3 and 4, which are partly rotated when the brake is applied, thereby expanding the shoes; and between the opposite ends of the halves are similar cams 1 and 2, which are for adjustment only. These cams can be set at any angle, separating the brake halves more or less as desired, this adjustment being done by wrench on the hidden end of the cam stud.

The Motor Car Repair Shop

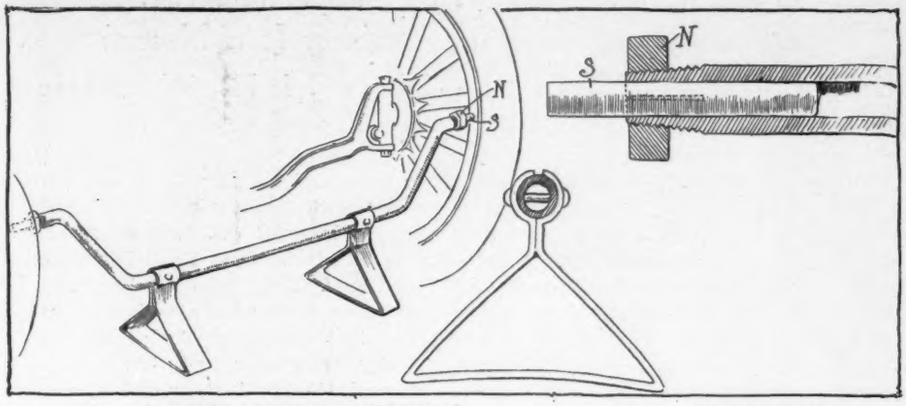


FIG. 1—WHEEL-ADJUSTING DEVICE A END SECTION

THERE are a great many medium-price cars whose valve tappets are held in place in the guides only by the cams on the camshaft, and when the cylinders are removed, unless some provisions are made to hold the tappets in place, they will drop out of the guides. It is not well to drop these tappets because they are most liable to be improperly replaced. They are of course all supposed to be interchangeable, but it often happens that in assembling the motor a little fitting is necessary; therefore, a tappet that fits perfectly in one guide will be just a little too loose or too tight when misplaced in another guide. Consequent excessive wear and noise may result from the loose one, and possible sticking to the tappet in its guide, with misfiring, may originate with the tight one, when the motor again is put into operation.

To prevent these valve tappets from dropping out, and to hold them in place while the cylinder castings are removed, three methods are employed which are shown in Fig. 2. One method applicable to motors having adjustable tappets, is to simply slip a large split cotter-pin between the adjusting stud S and the lock nut N, as indicated in the illustration at the left. Where there is not sufficient room for a cotter-pin a taper pin or the like might be employed, as shown in the illustration at the right. In the non-adjustable types of lifters, holes H, generally are provided, through which a cotter-pin or nail may be placed as indicated in the central figure.

Alignment of Front Wheels

It is not generally known, perhaps, that excessive tire wear often is caused by improper adjustment of the cross link of the steering gear. A point in connection with this adjustment is that which is termed foregather. In order that the front wheels of a vehicle run and steer properly, the cross-link of the steering gear should be adjusted so there will be about ¼ to ⅜ inch foregather present. This means that the foremost points of the wheel felloes should be from ¼ to ⅜ inch closer together in front than the hindmost points of the wheeled felloes. In Fig. 1 is shown a simple home-made device used in the Speedwell factory for testing and adjusting the wheels of those cars for proper foregather. It comprises a ½-inch piece of gas pipe, bent as indicated, and mounted upon legs, formed from band iron about 3-16-inch thick and ¾-inch wide; these legs are formed and secured to the pipe with a pin, which is riveted at both ends, as indicated at A. The ends of the pipe are threaded with a tapered thread and slotted longitudinally and a nut, N, is provided to fit the thread. A rod S about 6 or 8 inches long and of such diameter that it normally will slide freely in the pipe, is placed in each end to render the ends adjustable, and when the nuts are drawn up on the tapered thread these rods are secured in place. To use this device the wheels are set for a straight forward direction, and the device placed in front of the axle as shown; then the ends of the device are adjusted so that they just touch the felloes at their foremost points. The adjustments are secured in this position and the device is moved to a similar position behind the rear axle; if the alignment of the wheels is correct with one end of the device touching one of the felloes, the other end will lack from ¼ to ⅜ inch of touching the other felloe.

Good Motoring Habits

Remember that in the care and operation of a motor car, much must be left to the judgment of the operator, who should study the construction of his car and thoroughly acquaint himself with its mechanism, the functions of its various parts and the why of everything connected with it. After this the development of a few good habits relative to the care and operation will insure good service and little trouble.

Habits are formed by constantly repeating certain thoughts or actions; and once the habits become fixed, the thoughts or actions become automatic and cease to be a hardship or inconvenience. The following habits should be developed by every operator of a motor car:

See that the car always is thoroughly lubricated and supplied with gasoline and water. This should be done before starting out on a run.

See that all nuts, bolts and screws are tight. This is best done once or twice a week while going over the entire car with the hand oil can, and while filling the grease cups provided at various points on the chassis.

Keep the tires well inflated. A certain pressure is recommended for every size of tire; and the amount of pressure required in any size of tire may be learned by applying to the maker. Having learned the pressure required in a tire, a pressure gauge should be carried so that a positive test can be made occasionally. Before leaving the garage, one should at least inspect the tires and see that all stand up full and round. Above all things, don't start off on a trip without first making sure that an adequate reserve supply of extra tubes, the tire repair kit, the pump and the jack, are safely stowed away.

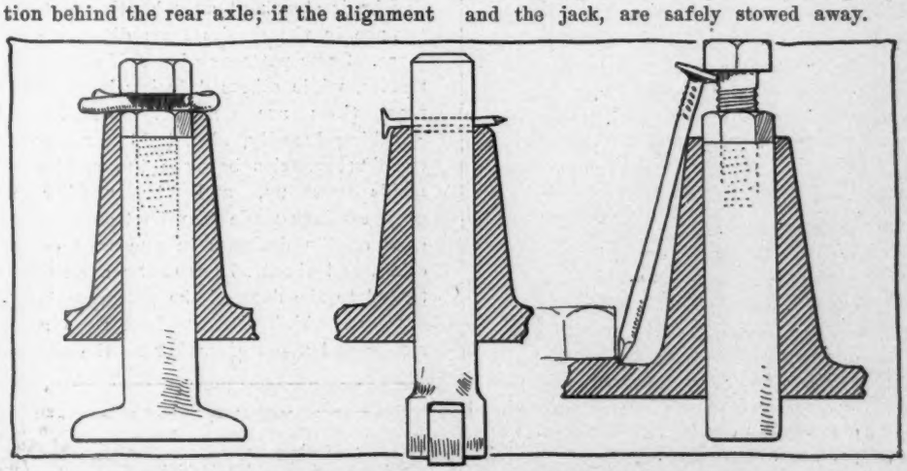


FIG. 2—THREE MEANS OF RETAINING VALVE TAPPETS IN GUIDES

On the Use of Aluminum

Motor Car Factories Now Using So Many Castings of This Light Metal That Co-operation Between the Factory and Designing Engineer Is a Necessity

Engineers Are Told the Ideas of H. W. Gillett

SYNOPSIS

WITH the increasing number of aluminum castings the car factories are requested to make they encounter very great difficulties, due to the design and style of construction. The vital point of the whole matter, that one that concerns not only the manufacture but the price and delivery, is in getting together with the factory at the right time. If the designing engineer would take these matters up with his factory and get their ideas on it, and get the pattern makers in touch with the foundry it would aid a great deal.

Owing to the high contraction in cooling of aluminum and its weakness when it is solidified it requires more careful design than any other casting metal. A car designer and the pattern maker can both assist in simplifying the work of making aluminum castings. Speaking broadly, almost 50 per cent of the discrepancies between the number of molds put up and the number of good aluminum castings made can be traced to the designer in one way or another; and about 25 per cent more may be traced to the door of the pattern maker. In a word, this means that if the designer of a motor or gearbox casting will talk the matter over with the foundry man, and if the pattern maker will also talk the matter over with the foundry man, the number of waste castings will only be one-quarter of what it is under existing circumstances, where the designer goes ahead in his way and where the pattern maker goes ahead in his particular way.

The best design of aluminum casting is one of uniform section as near as possible throughout. A casting is well designed that has not any sudden great change of section, that is, where the section is one-quarter inch thick it will not suddenly change to two inches in thickness. If a casting has such sudden changes it is certain to crack, due to the cooling process, because the small section freezes first and the contraction produces the fracture. There is no reason why such faults in castings cannot be eliminated if the designer and pattern men will meet together with the foundry experts before the design is finally settled upon.

An aluminum casting should be designed in such a manner as to allow cold pouring of the metal. Cold pouring gives fine crystals well inter-locked and a strong nut, because the freezing takes place equally. If you have exceptionally thin portions of your castings you have got to pour the metal very hot in order to fill the mold. The hot pour does not give as strong a casting.

If you can take this question of design up with the foundry men it will work to your own interests, because more than half the foundry troubles are directly due to faulty design and pattern construction.

THE lightness, beauty and resistance to corrosion of cast aluminum, combined with its good strength in comparison with its weight, are bringing it into vastly increased use in the best modern cars. All car castings must, of course, be designed primarily with a view to the fitness for the particular use intended. Usually, however, there are several ways of designing an aluminum casting, any one of which would allow it to serve its purpose well, keep within the weight limit and still be a good proposition from the point of view of the machine shop.

The problem is then to select the best possible design so that the casting may be produced in the best and cheapest way. Luckily the design that allows a casting to be easily and cheaply made is usually one that gives us a casting of far greater strength and reliability than one so designed that it is a difficult one to handle in the foundry. The designer is usually closely in touch with the machine shop and well acquainted with its problems, but seldom, indeed, is he a foundry expert; could he realize the extra labor, and hence the extra cost and delay in production, a seemingly slight point in his design may make in the foundry he would more often consult with the patternmaker and with the foundryman before completing his design.

Careful Design Required

Owing to certain physical properties of aluminum, such as its high contraction on cooling and its weakness when just solidified—that is, its hot shortness—aluminum castings require more careful design than any other casting metal. If one examines the defective casting records of the individual patterns in a large aluminum foundry he is struck at once by the vast difference in the results from different patterns. Some patterns give uniformly good results, while others differing but slightly from them are extremely troublesome. Speaking broadly, almost 50 per cent of the discrepancies between the number of molds put up, and the number of good castings made may be traced to the door of the designer in one way or another, and about 25 per cent more may be traced to the door of the patternmaker.

Do not think that we look upon a designer and a patternmaker as the natural enemies of the foundry. On the other hand, they are keen to see that what they can do to aid the foundry without interference with the requirements which the casting must meet will come back to them many fold in lower cost and in regularity of delivery. But it so often happens that the motor car engineer will say: "We know that particular design is a poor foundry proposition and that pattern is not made in the best possible way, but we cannot change that model now or can we tie up production of our cars long enough to allow changing the pattern," that it is worth while to remind you that the time to go into these points is when a new model exists in the mind and on the drawing paper of the engineer, rather than when the car is being assembled.

Contraction of Metal

In passing from the molten to the solid state aluminum contracts a good deal; when a heavy and a thin section in an aluminum casting forming a crankcase base or a gearbox or differential housing come next to each other, the thin place will freeze first. If the thin section is so situated as to lie between a heavy section and a gate or riser the supply of metal is thereby cut off from the molten mass in what is to be the heavy part of the casting. The contraction on freezing has to take place, and instead of taking place uniformly over this heavy part and maintaining the exact shape of the mold, it will often draw away from a corner and produce a shrink. We can induce the heavy portion to freeze more quickly by placing the chill in the mold at that point, a chill being a piece of some material, usually a metal having a higher heat conductivity than the pot of the mold. It is difficult to accomplish the end completely by this method; it greatly increases the time required to put up the mold and produces unsightly chill marks on the casting.

The ideal casting, therefore, is one of as nearly uniform thickness of section throughout as is practical, since that means that the whole casting solidifies at the same time, so that contraction is uniform. On account of the hot shortness of aluminum the shrinkage strains set up when a heavy section joins a thin one often causes the metal to give away entirely at that point, and a crack appears.

If it is inevitable that light and heavy sections come together, the cooling strain should be distributed by joining the sections by a smooth curve, that is, a liberal

EDITOR'S NOTE—"Some Points on the Design of Aluminum Castings" is the title of a paper read before the Society of Automobile Engineers by H. W. Gillett on June 17, 1911.

fillet. This is on account of another physical property common to all molten metals. Suppose we have a sharp corner, as at the vertex of a right dihedral angle. The metal, of course, freezes first at the edge, crystals being deposited which tend to grow inward. Each succeeding crystal finds it easier to attach itself to the end of the one previously formed, so that soon a line of crystals has grown by bisecting the angles. Now crystals in regular lines do not form as strong a mass as when they lie interlaced in helter-skelter fashion. It is easier to pull apart a pile of nails lying side by side than one which has been stirred up. On a smooth curve there is no adventurous crystal which comes out first and to which the rest attach themselves like a swarm of bees. The crystals among the curve surface come out more nearly at the same time, and the next lot is deposited lying between the first ones in helter-skelter fashion, instead of coming out in a line with the follow-my-leader effect. In other words, a sharp angle tends toward the formation of a definite line of crystals, which forms a sort of cleavage plane and is a source of weakness.

Liberal Fillet Necessary

A break across a square bar of almost any metal will show distinct lines connecting the opposite corners, showing the arrangement of the crystals in this fashion, whereas a round bar does not show any such lines. From this we can see the necessity for a liberal fillet. The sharper the angle at a change of direction, or the greater the difference of thickness at a change of section, the greater should be the radius of curvature of the fillet.

There is no one factor in foundry practice that more gravely affects the strength of the casting than the pouring temperature. The reason for this is again the speed of crystallization. The cooler the metal can be poured into the mold the more quickly it solidifies and the less time the crystals have to grow or arrange themselves, and the result is a mass of closely interlocking crystals forming a strong fine-grained material.

The effect of pouring temperature is well shown by a set of test bars, all of which were cast from the same pot of metal with exactly similar molds, the only variable being the pouring temperature. The bars are arranged in the order of pouring temperature, as shown by the label on the other side, which also gives the strengths of the individual bars. You will note the rough surface and coarse fracture of the bars cast at the higher temperatures, as well as their low strength. The average results obtained in this series of tests are given by the curve in Fig. No. 1, which shows that the lower the pouring temperature the stronger the casting.

This has a distinct bearing on design, since the lowest temperature at which a casting can be poured is that to which the thinnest section will just escape a misrun. If the casting is so designed that this crucial section forces you to pour hot, all of the thicker parts will freeze too slowly and will be weaker than they should be. By slightly increasing the section of the thinnest parts, a casting could often be poured 100 degrees colder and the strength of the whole casting be increased at least 10 per cent. This is a matter which is absolutely up to the designer. If the bulk of the casting is from ¼ to ½ inch, one little part ⅛ inch thick will give us a resultant casting, on account of the high pouring temperature required, whose average strength is about 16,000 pounds per square inch, instead of 18,000 pounds or over.

The very great influence of the pouring temperature is the reason why separately-cast test bars show only the quality of the ingot metal and nothing at all as to the strength of the corresponding casting, even though the test bar and casting may be poured from the same pot of metal. Your standards sub-committee has wisely specified that aluminum test bars shall be made on castings. Were this stipulation not made the foundryman who wished could pour the casting as hot as he pleases, allow his metal to cool way down and then pour separate test bars which would then show an utterly fictitious strength in comparison with the casting.

The general lack of attention to pouring temperature, not only in commercial practice, but in most of the investigations on aluminum, vitiates a great deal of the published data on aluminum alloys and accounts for a great many irregularities and seeming contradictions in the results. In comparing the different aluminum alloys, really comparable results can only be obtained by pouring at the same number of degrees above the melting point of the particular alloy in question in all cases, thus allowing the same time for crystallization and producing an analogous condition.

After the designer has done his work it is up to the patternmaker to decide how the pattern shall be constructed. First of all, the pattern should be so made as to allow the use of molding machines wherever practical. If a patternmaker is not too much bound down by tradition he can often simplify matters greatly. For instance, in a crankcase with several projecting pieces on the side which would make it impossible to draw the pattern from the sand without the use of core work at the sides, by the simple expedient of making the pattern hollow and putting in a lever by which the pieces are drawn into the body of the pattern and the pattern then lifted out, a large amount of core work was eliminated.

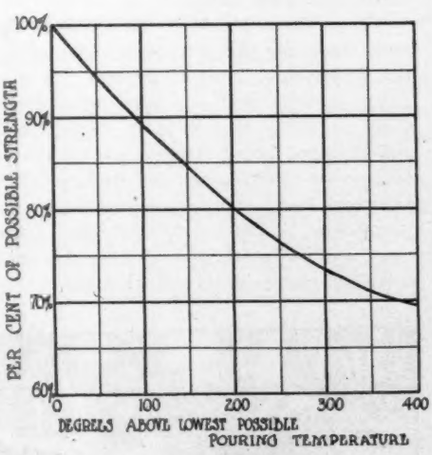


FIG. 1—RESULTS OF POURING ALUMINUM FOR CASTINGS AT DIFFERENT TEMPERATURES

Core work always means trouble. It takes time to set cores in the mold correctly, and if a lot of small cores are used the danger of shifts is greatly increased. If, on the other hand, large cores are used, they must be made hard enough to allow handling them and setting them in the mold, which requires not only a solid core but one reinforced by iron rods and wires. This makes them hard to crush, and on large cores inside of thin walls of metal introduces danger of cracking. When we have a core completely surrounded by walls of metal it is a question whether the tensile strength of the metal as it solidifies is greater than the compressive strength of the core. Let the core be ever so slightly too hard and your casting is inevitably scrap. We have seen patterns requiring large and complex cores within walls as thin as $\frac{3}{16}$ inch, from which patterns it was impossible to make castings, since any core strong enough to place in the mold would have too great a compressive strength for the metal to crush without cracking the casting.

Core Prints Large and Deep

If cores must be used, the core prints should be large and deep so as to anchor the cores firmly without the use of chaplets to hold the cores in place, since it is impossible for the molten metal to fuse a chaplet into the body of the casting, without pouring at a temperature far above that necessary to give the greatest strength. When a job requires cores, the first question that should be asked by the patternmaker is if that pattern cannot be made so as to allow the use of green sand core, or at least a green sand half. Green sand will crush and give away when the casting contracts on cooling, where a hard, dry sand core will not crush and will crack the casting.

If a considerable number of castings are to be made, wooden patterns and core boxes are an abomination. They warp and swell in use, dry out and crack apart in storage and wear out by abrasion from the sand and by the constant rapping necessary to allow the pattern to be withdrawn from the mold or the core box from the core. Good metal patterns and core boxes are an economy if many castings are to be made, or if a few are to be made from the same pattern in successive years.

With proper design and a well made pattern the engineer who wants an aluminum casting must next face the problem as to what aluminum alloy he shall specify his casting to be made from. He has a choice of practically three alloys—one containing 8 per cent copper, one with 3 per cent copper and 15 per cent zinc, and one with 35 per cent zinc, designated respectively as alloys Nos. 1, 2 and 3 in the standards' sub-committee specifications and known to the trade as Nos. 12, 31 and 63. Comparable test bars on these show in the order named—18,000 pounds, 22,000 pounds and 35,000 pounds tensile strength per square inch.

No. 12 Popular With Trade

Probably 90 per cent of all aluminum motor car castings are made of No. 12. Though this shows the lowest tensile strength of the three, the trade has come to it for several reasons. First, when aluminum castings are desired, lightness is usually a prime factor, and the zinc-containing alloys, Nos. 31 and 63, are respectively about 7 per cent and 18 per cent heavier than the copper-containing alloy, or No. 12. The second reason is that the alloys containing zinc are more liable to shrinkage strains, which may develop as draws and shrinks or as hidden strains, which cause cracks to appear after the material has been subjected to vibratory stress, and make the casting to fail in service. The strength of the zinc alloys falls off more rapidly with increasing temperature than does that of No. 12, so that the alloys which are stronger at ordinary temperatures, when subjected to the heat developed about a motor, may lose their seeming advantage.

The zinc alloys, moreover, are more brittle and less ductile than the No. 12, as well as more likely to break down in vibration or under repeated impact. Although so eminent an authority as Mr. Souther disagrees with this, yet there must be a reason for the very marked abandonment of the zinc alloys for the copper alloy throughout the industry. Mr. Souther's figures given in this paper are the same he published several years ago in the metal industry, and on looking over the fuller data in this earlier paper it seems to us he must have drawn conclusions from too few tests and probably from tests on bars not necessarily cast at corresponding temperatures.

We expect to go into this matter of endurance of different aluminum alloys more fully in the near future and plan to report the results at a future meeting of the society. A large number of tests so far have shown that on the White-Souther endurance machine the different alloys run about as follows:

No. 12—over 1,000,000 revolutions,
No. 31—about 600,000 revolutions,
No. 63—about 500,000 revolutions,

before fracture. These are averages of a large number of bars. You will note that the resistance to vibratory stress is in opposite order from that of the tensile strength, but exactly in the order of the ductilities.

On another type of endurance machine where the bar is subjected to repeated blows, we understand the No. 12 will stand about 1,000,000 blows before rupture, while No. 31 will only stand 1,500 to 2,000.

The brittleness and unreliability of No. 31 and No. 63 are usually laid to the presence of zinc. On the other hand, it is more likely due to the absence of aluminum—that is, alloys high in aluminum are resistant to vibratory stresses, while alloys low in aluminum are less resistant. An alloy containing 88 per cent aluminum and the rest zinc gives nearly as good results in the endurance test as does No. 12 with 92 per cent aluminum, but since the tensile strength is decidedly inferior to No. 12, and it is a heavier alloy, this is no longer a commercial alloy.

Magnalium, or 94 per cent aluminum with 6 per cent magnesium, is about as strong in tension and has about the same resistance to vibratory stress as has No. 12. To get strength enough to pay for the added weight where zinc is used as the chief alloying metal we are forced to use so much zinc that the ductility and resistance to vibratory stress are cut far below the figure for No. 12. We really have three factors, strength, lightness and resistance to vibratory stress. If we give each factor what we might call a coefficient of importance and multiply the three together, the alloy which gives the highest product will be the most valuable.

The car engineer has practically made this calculation and he has answered the question by specifying the 8 per cent copper alloy in the vast majority of cases.

Engineer's Problem Also

The engineer who wishes to get good reliable aluminum castings and at a reasonable price must then realize that the problem is not entirely up to the foundryman to whom he entrusts the handling, but that it is his problem as well. The responsibility for design is solely his, and if he will so proportion his castings as to avoid great inequalities in section or sharp changes in direction, and if he will use liberal fillets, if he will keep away from such thin sections that the metal must be poured too hot to get strong castings, if he will instruct his patternmaker to go as far as he can in avoiding dry sand cores, if he will provide good substantial patterns, will specify the proper alloy and then see that the casting is made with proper care and with proper control of pouring temperatures, he will get castings which will allow him to utilize to the fullest extent all the many advantages which aluminum has for his purposes. But he should not for one moment forget that unless the design is right the best efforts of the foundryman cannot produce a casting which will have in the fullest degree those advantages which the perfect aluminum casting should have.

The designer is father to the blue print—the blue print is father to the pattern—and the pattern is father to the casting. Even though the relationship be remote, the designer should give his great-grandchildren the best possible chance.

Motor Car Literature

THE Wisconsin Tour Book for 1911, recently issued by the Wisconsin Motorist, Milwaukee, is a 308-page, 5 by 10 size book containing all the main motor car routes in the state of Wisconsin. There are 130 routes in all outlined, with fifty maps.

The Automobile Club of Maryland recently issued its 1911 year and route book, which contains not only touring information covering the state of Maryland, but outlines in a general manner routes throughout the length and breadth of the United States. All told there are 636 routes outlined. There are several maps, and the club's year-book information included.

An interesting thirty-two-paged, paper-covered booklet has been received from the Automobile Club of America, New York, describing and illustrating the club's complete apparatus installed in its laboratory for the purpose of testing motor car and other internal combustion engines.

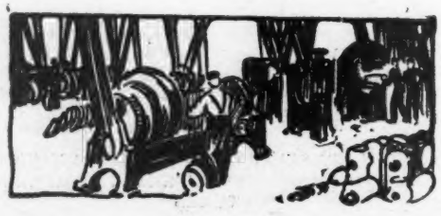
A large-sized folder, 12½ by 17 inches, has been mailed recently to the trade by the Hartford Suspension Co., calling attention to its safety crank, which is a new device placed on the market by this concern.

A conventional catalog, entitled Bulletin No. 152, from the Buda, Chicago, describes the Buda line of motors and transmissions.

The Fudge Brothers Mfg. Co., Marion, Ind., describes and illustrates in an attractive form its line of Fudge emergency tires. A price list is included.

The 1911 catalog of the Auto Parts Mfg. Co., Muncie, Ind., features its line of transmissions, clutches and steering gears. Line drawings clearly illustrate the mechanical features of each subject.

"Tour Book 1911" is the name of the route book for the current year issued by the Automobile Club of Buffalo. It is a 160-page book and contains route directions covering the state of New York, and classified into "Suggestions for routes going east, Buffalo to the Hudson river and New York; and suggestions for routes going west." There are thirty-five route maps, and an insert map showing the main travelled routes in New York state.



Legal Lights and Side Lights

WISCONSIN'S NEW LAW

THE Wisconsin legislature has passed the consolidated motor car bill and it becomes a law August 1, having received the signature of Governor McGovern. Owners who now have licenses will not register until January. The chief changes are as follows:

Annual registration, instead of present perpetual registration while car registered is in the hands of its then owner.

Annual fee of $5 for registration. Present fee is $2 for perpetual license. Proposition to tax by horsepower turned down.

Two licenses must be carried, front and rear. Only one necessary heretofore. The tags are furnished free upon payment of registration fee.

Red tail light must be carried in addition to one light on front as at present.

Speed limit in cities changed from 12 miles per hour to 15 miles per hour; in country, 25 miles per hour as at present. A proviso is included that no greater speed shall be used anywhere than is safe under the circumstances and conditions.

No person under 16 years of age may operate a motor vehicle, unless accompanied by a responsible adult.

Each city and village clerk must keep an up-to-date list of motor car and cycle owners, in booklet form, to be furnished by the secretary of state and to be accessible to free inspection during business hours.

After paying the expenses of the department of the secretary of state's office which attends to the registration work, three-fourths of the money accruing from the registration fee collection shall be transferred to county treasurers to be used in the repair of country highways, and the remaining one-fourth shall be used to augment the state highways fund.

A second offense against speed regulations shall be punishable by fine of $25 to $100, or imprisonment in jail not more than 60 days, or by both fine and imprisonment, at the discretion of the court.

No city, village, county, town, park board or other local authority shall have the power to pass any law or regulation interfering with or contrary to the state law.

Manufacturers are to have assigned to their testers a distinguishing number or letter, and this number or letter must be used whenever factory cars are being driven on streets or highway.

Any driver inflicting an injury to any person must stop and offer assistance and must also give name and address as requested. Failure to do either lays the offender liable to a fine of not more than $100 or imprisonment for a term of not more than 3 months.

Secretary of State James A. Frear on July 15 sent a circular to every owner in the state informing that the new law goes into effect on August 1. While present licenses are good until January 1, 1912, all cars registered after July 17 come within the new law and a fee of $5 must be paid.

At the close of business July 14, the secretary had issued 21,330 licenses since the original registration law went into effect in 1908. There are 520 dealers and manufacturers' licenses extant. The law makes no change in the manner and price of registration of manufacturers and dealers' cars, as the fee has always been $5 for each garage or factory, which includes five license tags.

The Wisconsin State A. A., which worked hard for the passage of a reasonable bill, is wholly satisfied with the results obtained. Although the fees have been raised, the association officials feel that they are lucky to have kept the amount to the point in the new law. It has been possible to include in the law provision for a city speed limit of 15 miles per hour and an approach made to the ideal speed limit of no fixed limit, but "recklessness under the circumstances and conditions."

NEW LAW IN CHICAGO

The city council of Chicago on Monday night passed an ordinance which forbids the use of siren horns on city streets and prohibits cutouts. Another ordinance, prepared by the mayor, was held over to fall. This bill is far wider in its scope. It will compel the shading of headlights, impose fines for smoking motors, forbid passengers sitting in front of the drivers and obstructing his or her view, and prohibit any one under 18 years of age driving. The park commissioners will pass an ordinance similar to the one that went through the council Monday night.

WILL ENFORCE LIGHT LAW

The law compelling all owners of horse-drawn vehicles with a few exceptions, who use the highways in Massachusetts at night, to carry lights on their vehicles goes into effect Saturday, July 22. As a result there has been a general rush among the dealers of lamps to supply the demand for all sorts of lights. The greater number are content to use the ordinary lanterns, it seems, although there have been many lamps sold for side lights on buggies. The highway commission has the power to suspend the law in certain cases upon application following a hearing, but no such applications have been received so far. There is no doubt but what a lot of people are ignorant of the law going into effect so soon. Owners of vehicles carrying hay, straw and other inflammable materials need not carry any light. There is a provision in the law holding the driver of the vehicle responsible for the lighting of the vehicle, and if any one refuses to give his name and address when asked by an officer there is an additional fine, so that there is no chance to get away from the law.

FAVOR A WHEEL TAX

There is some talk among the Baltimore city fathers of passing an ordinance having for its object the taxing of vehicles of all descriptions which use the city's streets. The idea of such a tax is to solve the much-mooted paving problem, which includes the replacing of all cobblestone streets with up to date paving material and the repairing of all well-paved streets where such repairs are necessary.

SAVES LATE BUYERS MONEY

A short time ago the Licensed Automobile Dealers of New York city had prepared and introduced into the legislature a bill amending the Callan highway law, in reference to registrations of motor vehicles so that any motor vehicle registered for the first time after August 1 of any year would be required to pay only one-half the annual fee. This bill was passed by the legislature, has been signed by the governor and becomes effective August 1 of this year. This bill was introduced by the Licensed Automobile Dealers for the benefit of those buying cars late in the year, and while only having the use of their cars for a few months, are compelled to pay for a full year's registration.

SOUTH BEND IMPOSES TAX

A vehicle tax ordinance passed by the city council of South Bend, Ind., went into effect the first of the month. The tax as regards motor cars, trucks, etc., is as follows: On each two-passenger car for private use, $5; on each three and four-passenger car for private use, $6; on each five-passenger or more car for private use, $7; on each two-passenger car used by liverymen for public hire, $6; on each three and four-passenger car used by liverymen for public hire, $7; on each five or more passenger car used by liverymen for public hire, $8; on each delivery car, cart or cab, $5; on each motor truck, 2,500-pound capacity or less, $6; on each large motor truck over 2,500 capacity, $7; on each motor cart, cab, delivery wagon or truck equipped with metal tires, $1 additional to the above. It is expected the tax will bring in about $20,000, which amount is to be used in the repair and improvement of the streets.

From the Four Winds

THE INTER-STATE, WHICH WON THE TWO BIG RACES AT KANSAS CITY MEET

ANOTHER New One—The West Grand Automobile Association was organized at Bloomington, Wis., by owners living in the western part of Grant county. O. H. Martin was elected president and William Morrissey secretary and treasurer.

Milwaukee Has Big Party—The first stag party in the new clubhouse of the Milwaukee Automobile Club, Milwaukee, on July 13, was a tremendous success. More than 500 were present. The fact that the new Grand avenue viaduct is open to traffic is making the clubhouse a more popular haven than ever before.

After Another Parkway—The Milwaukee county board of supervisors has called for bids for the construction of the new Janesville Plank road parkway, from Layton Park, Milwaukee, to Hales Corners, about 5 miles. This is the second parkway project started by the metropolitan park commission of the city and county of Milwaukee, and will form two important links of the chain of county highways. The road will be 100 feet wide and include a parkway in the center.

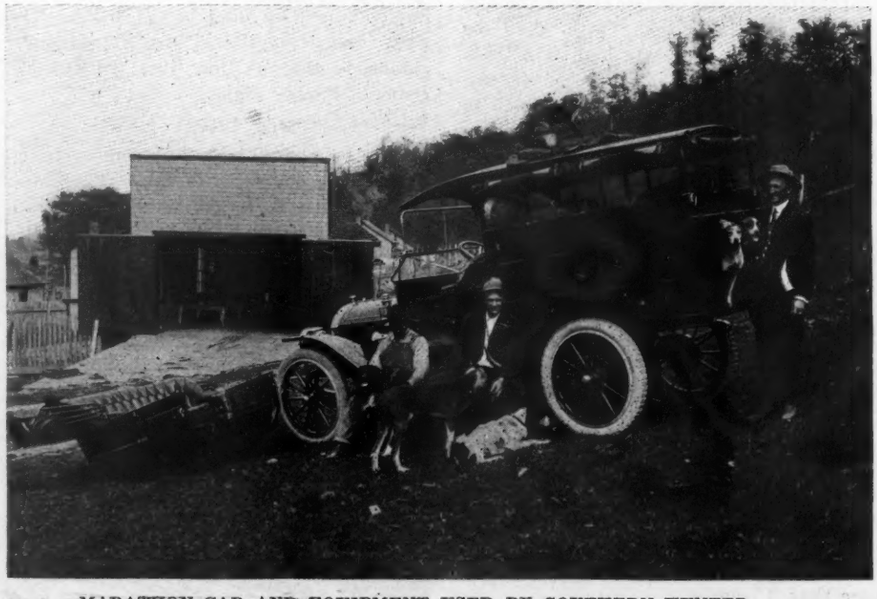
Marion Carries a Message—The Marion car arrived in Atlantic City, N. J., Monday afternoon from Albany, with official messages of greetings from Governor Dix and Mayor McEwan, of Albany, for the grand exalted ruler of the Elks, Garry Herrmann, at the Elks' convention. W. K. Hadley, sales manager for Charles E. Riess & Co., general eastern distributors of the Marion, received the official messages in Albany from the governor and mayor, and left there Sunday morning at 11. They arrived in New York Sunday evening. At the city hall the next day they were received by Mayor Gaynor, who, after a speech of welcome, delivered to Mr. Hadley an official message of greetings. The message was delivered at the official meeting of the convention and the Marion headed the parade Thursday, the 13th, carrying the grand exalted ruler.

Blazing a Texas Trail—For the purpose of looking over and ascertaining the best route for the proposed highway from the northern boundary of Texas across the state to the Gulf of Mexico, a party occupying three cars left the Red river on July 10 for Galveston. They reached that city Saturday, July 15, and will return northward over a slightly different route. There are sixteen in the party. The general idea is to construct across Texas, from the Red river to Galveston, a splendid highway, and then to encourage the adjacent counties to build good roads to connect with this highway. Good roads associations in almost all sections of the state are interested in the project and are co-operating.

More Members for Syracuse Club—The Automobile Club of Syracuse, at a meeting held last week, elected twenty new members, increasing the membership to 738. The club's system of touring information is greatly appreciated by motorists everywhere. The date for the orphans' day outing is tentatively fixed for July 25.

Stirring Up Enthusiasm—Acting President H. B. Groves, of the Iowa Automobile Club, will make an effort to consolidate all the motor and good roads organizations in the state with that association. Mr. Groves proposes to make a trip over the entire state in the interests of the club and then will call a general meeting, at which time the larger organization will be perfected. Tom B. Lacey, of Council Bluffs, was elected president, but he has recently removed from the state, and Mr. Groves, who is vice-president, is in charge of the club's activities.

Marylanders Signboarding—Forty signs have been posted along roads in the beautiful Green Spring valley of Maryland during the week by Secretary H. M. Luzius, of the Automobile Club of Marymended by the club, arranged in alphabetical order, according to towns and cities. The list of foreign hotels and garages has been compiled by the club's foreign rep-



MARATHON CAR AND EQUIPMENT USED BY SOUTHERN HUNTER

resentatives and the directory also includes a list of the club's foreign delegates in France, Germany, Greece, Italy, Norway, Russia, Spain, Sweden, Australia, Great Britain, Australia and other countries.

Busy Year in Michigan—Secretary of State Martindale, of Michigan, has issued from the license section of his department 22,834 licenses in the 5 months of this year, ending June 1. The receipts have been $76,000, while for the whole 12 months of last year the total receipts were but $73,000.

Oklahomans Choose Campbell—At a recent meeting of the Oklahoma Automobile Association, A. O. Campbell, the former president of the organization, was elected secretary in place of George Voegell, who was elected to the position at the annual meeting but has not served. A. F. Binns was elected to membership on the A. A. A. contest board.

Car for Hunters—The widespread use to which motor cars are placed nowadays is illustrated in the combined hunting and touring car recently built by the Southern Motor Works, of Nashville, Tenn., for J. J. Gray, Jr., a millionaire phosphate man of Rockdale, Tenn. The hunting body can be readily detached at the rear of the front seat, and the touring car body put in its place.

Will Help Farmers—The Outagamie Automobile Club, of Appleton, Wis., has adopted a resolution to the effect that if any farmer or other person will bring the proper evidence to the officers of the club of the abuse of their rights on the public highways, the malicious destruction of live stock or fowl, or any other violation of the motor car law, the club will assist in the prosecution and lend every effort to bring the guilty parties to justice.

Washington Counts Cars—There are three times the number of motor cars licensed today in the state of Washington than appeared on the state tax rolls for the year 1910. Since January 1 licenses have been issued to more than 2,000 new cars. The county tax rolls for 1910 showed a total of 2,253 cars in the entire state. The records of the secretary of state show that 9,736 motor vehicle licenses have been issued. June 1 the highest number of car licenses was 7,651. New cars purchased since that date have carried the license number up to 9,736.

To Tour to Road Meeting—Reports coming in from all directions indicate there will be a big attendance at the Pacific highway convention, to be held in Portland, August 4 and 5. The Seattle Automobile Club recently voted to make this event one of their annual runs, which will mean at least fifty cars will motor from Puget sound to Portland. This evidently will be the biggest representation of any outside city. However, most of the Oregon towns along the Pacific highway and those of southwestern Washington will be represented by an active delegation.

INDIANAPOLIS-SAN FRANCISCO TOURISTS AND THE WAY THEY SLEEP IN A COLE

CANADIAN CUSTOMS TARIFF ON MOTOR CARS AND PARTS

Compiled by Modern Power, Winnipeg

ARTICLE	Per cent
Acetylene tanks, brass	30
Aluminum castings	25
Ammeters	27½
Anti-skid rivets, steel	30
Covers, tops	35
Axles	35
Ball bearings	27½
Battery box brass parts	30
Bearings	27½
Bells	30
Bent woodwork, unfinished	20
Bodies, finished	35
Boilers	27½
Boiler fixtures, parts of iron or steel	27½
Bonnets	30
Brakes	30
Brake drums	30
Brass castings	30
Brass pipe fittings	30
Carbide	17½
Carbureters	30
Castings, rough—according to material as follows:	
Aluminum	25
Brass	30
Steel	27½
Chain repairs, steel	30
Chains, malleable sprocket or link belt	Free
Chain guards, according to material	25 to 30
Charging apparatus, electric	27½
Chassis	35
Clips or clamps, iron or steel	30
Clocks, motor car	30
Chucks, iron or steel	30
Cocks, brass	30
Commutators	27½
Cushions, according to material	
Cyclometers	25
Dashes and fenders, according to material	
Differential gears	27½
Dust shields, according to material	
Electric motor car motors	27½
Engine packing, rubber	35
Engine parts (integral), iron or steel	27½
Eye protectors, goggles, etc	30
Felt washers and dust rings	25
Foot bellows for horn, leather	25
Forgings	30
Frames	35
Frames of iron or steel with motors attached (no springs or axles)	30
Fuel level indicators	30
Gasoline motor car engines	27½
Gasoline engine fittings, brass	30
Gasoline syphons, brass	30
Gasoline tank gauges, brass	30
Gear cases, according to material	
Gears and pinions, iron or steel (not assembled)	27½
Generators (gas), brass	30
Gradometers	25
Grease cups, brass	30
Hampers	30
Horns, brass (not plated)	30
Horns, brass (plated)	35
Hose clamps and menders, according to material	
Igniters	27½
Ignition apparatus	27½
Ignition batteries	27½
Insulators	27½
Iron castings (rough)	27½
Iron castings (finished), if engine parts	27½
Iron castings (finished), otherwise	30
Jacks, iron or steel	30
Lamps	30
Lamp brackets, according to material	
Lamp parts, metal	30
Lamps, storage battery	27½
Lock nuts, iron or steel	30
Locks, according to material	
Lubricators	30
Luggage carriers, iron or steel	30
Mats, rubber	35
Motor cars	35
Mudguards, according to material	
Mudguard attachments, according to material	
Mufflers, according to material	
Odometers	25
Oil cans, brass	30
Oil cups, brass	30
Oil guns, brass	30
Oil hole covers, brass	30
Portable electric lights	30
Pressed steel bodies and frames	35
Pressed steel channels and angles	30
Pumps, tire, according to material	25 to 30
Pumps, oil, according to material	
Pumps, water, according to material	
Pumps, brass circulating	30
Pump connections, according to material	25 to 30
Radiators, according to material	
Rims, steel	30
Roller bearings	27½
Running gears	35
Spark coils	27½
Spark gaps	27½
Spark plugs	27½
Speed indicators	25
Springs, vehicle	30
Sprockets	30
Steel balls	10
Steering apparatus, according to material	
Steering knuckles, according to material	25 to 30
Steering wheels, according to material	25 to 30
Steering levers, according to material	25 to 30
Steering yokes, according to material	25 to 30
Steps, according to material	25 to 30
Storage batteries	27½
Switches, electric	27½
Tanks, iron	30
Tanks, copper	30
Tires, rubber	35
Tire protectors and anti-skids, according to material	
Tire repair kits, according to material	
Tire repair tape	30
Tire tools, according to material	
Tire valves and stems, according to material	
Tool bags	30
Tops	35
Transmission gears	27½
Universal joints, according to material	25 to 30
Valves, engine, iron or steel	27½
Valve parts, iron or steel	27½
Vaporizers, brass	30
Volt-ammeters	27½
Volt meters	27½
Vulcanizers, according to material	
Wheels	35

Among the Makers

Fisk With Mosler—A. J. Fisk, formerly the general manager of Witherbee Ignitor Co., has joined the forces of A. R. Mosler & Co., to have full charge of all factories west of New England.

Oakland Production—The Oakland Motor Car Co. will complete its season's output August 1. Since November the company has turned out 3,900 cars, all of which have been sold. For the balance of July the factory will turn out twenty cars daily.

Mitchell Plant Running Full Force—The Mitchell-Lewis Motor Co.'s works at Racine, Wis., resumed operations with a full force on July 17 after a week's lay-off, during which the semi-annual inventory was taken and preparations made for the 1912 production.

James Joins Everitt—An addition to the Everitt sales forces is D. W. James, formerly with the Carl H. Page Co., of New York, who will act as assistant sales manager. The Everitt forces also have added the Everitt-Northwest Co. to their list of distributing branches. The organization was perfected by W. D. Wallace, who will act as manager. Headquarters are in Portland, Ore.

Harroun an Engineer—On July 17 Ray Harroun, driver for the Marmon company and winner of the 500-mile Indianapolis speedway sweepstakes this year, began work with the Marmon company as a member of the engineering staff, and will in the future devote his energies exclusively to this department of the work, having given up all racing on roads, tracks and speedways.

Busy at Brush Plant—One of the busiest factories in Detroit just now is that of the Brush Runabout Co. It is declared that contracts for the new Liberty-Brush have been closed during the past 2 weeks at an average of faster than 100 a day. The factory is producing eighty a day, and this week started a night shift, which will endeavor to keep up with the orders which the firm is receiving for the new car.

New Tire Company—A new tire concern, the South Bend Tire and Rubber Co., has been organized at South Bend, Ind., and a factory will be established at once. About 300 men will be employed. The company is financed by Akron and Mansfield, O., men, the officers and directors being: President, W. W. Blecker, Akron, O.; vice-president, W. A. Blecker, Mansfield, O.; secretary, M. V. Bentley, Mansfield, O.

Join Accessory Association—At a meeting of the board of directors of the Motor and Accessory Manufacturers the following-named concerns were elected to membership: The Allen Auto Specialty Co., 1926 Broadway, New York city; American Circular Loom Co., International Trust building, Boston, Mass.; Champion Ignition Co., Flint, Mich.; Detroit Carriage Co., 601 Clay avenue, Detroit, Mich. James H. Foster, of the Hydraulic Pressed Steel Co., Cleveland, O., was elected as a member of the board of directors, to fill the unexpired term of the late W. S. Gorton. H. W. Chapin, of the Brown-Lipe-Chapin Co., Syracuse, N. Y., was made permanent treasurer of the association, to fill the unexpired term of the late Mr. Gorton.

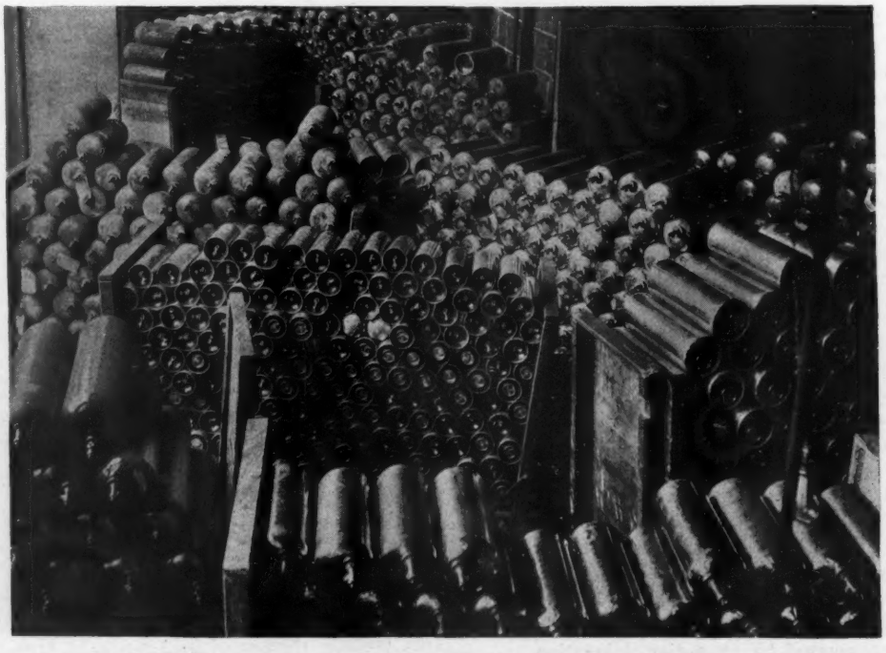
Many Branches Opening.—The dealers of Kansas City are thinning out on account of the factories establishing branch houses. The latest to establish a branch is the Auburn Automobile Co., of Auburn, Ind. J. J. Farley, the sales manager for the factory, was in Kansas City last week and purchased the interests of the local Auburn Motor Co. The new branch will be known as the Kansas City Auburn Automobile Co.

Amplex Officers Chosen—The annual meeting of the stockholders of the Simplex Motor Car Co., of Mishawaka, manufacturer of the Amplex, was held in Mishawaka, July 11. The stockholders elected the following directors: T. C. Starrett, H. N. Hovey, George Grant, of Detroit and D. A. Shaw, of Mishawaka, after which the directors elected the following officers for 1911-12: T. C. Starrett, president; H. N. Hovey, vice-president; D. A. Shaw, secretary and treasurer.

Ideal Company Incorporated—Following several weeks' preparation, the new factory of the Ideal Motor Car Co., manufacturer of the Stutz, Indianapolis, has been opened and the first cars will be delivered about August 1. Within the last few days the company was incorporated under the laws of West Virginia with an authorized capitalization of $100,000, of which $50,000 is represented in Indiana. The directors are Henry F. Campbell, secretary and treasurer of the Stutz Auto Parts Co.; Edward G. Sourbier, assistant to the vice-president of the Willys-Overland Co., and J. B. Flick, a capitalist.

Back to Normal Again.—The motor car department of the J. I. Case Threshing Machine Co., of Racine, Wis., which has been running a full shift at night for several months, has returned to normal operations while the preparations for the 1912 production are being completed. The entire regular day force and a night force of twenty are on duty and indications are that there will be no time for a short lay-off which is customary in Racine manufactories. A shipment of six Case cars to the Russian general agency of the Case company was sent from the factory last week.

New Westinghouse Device—George Westinghouse announced last week that he had succeeded in perfecting an air spring device. This invention is expected to do away ultimately with the use of pneumatic tires on motor cars. The invention is described as follows: The main feature is a double cylinder. The upper cylinder is attached at the top to the chassis frame and a lower one is attached at the bottom of the axle. The one cylinder telescopes into the other. Inside these are other tubes permitting of piston action in oil and air. When the car is running the pistons are working constantly. The spring suspension is accurately and automatically adjusted to suit the load. For every inch of telescopic action the air is compressed by a greater percentage of its original volume, consequently the resistance increases more



SHIPPING ROOM AT PREST-O-LITE FACTORY AT INDIANAPOLIS

and Dealers

rapidly. A company is now being formed to manufacture this device for Mr. Westinghouse.

Quits the Stoddard-Dayton—John F. Campbell has resigned as secretary-treasurer of the Dayton Motor Car Co. The resignation is dated October 1. He became secretary in 1905 when the Stoddard Mfg. Co. became the Dayton Motor Car Company. His successor has not been named.

A. W. Shattuck Goes East—Arthur W. Shattuck, for 10 years vice-president and general manager of the Milwaukee branch of the Thomas B. Jeffery Co., has resigned and will venture into the eastern field. M. B. Gilman, of the Rambler factory, is temporarily in charge of the Milwaukee branch, at 455-459 Broadway, until a successor is elected.

Des Moines. Sets Show Date—Des Moines dealers are already beginning to lay their plans for the third annual show which will be held some time next March. W. E. Moyer, president of the Des Moines Automobile Dealers' Association, and C. G. Van Vliet will have charge of the show. It will be held at the Coliseum, where the first two shows were held.

Too Many Old Cars—At the present time Indianapolis is suffering from an oversupply of second-hand cars, and as a result they are being sold at ridiculously low prices. At the beginning of the 1911 season the demand for new cars was below expectations and unusual concessions were made in accepting second-hand cars on new ones. Later in the season the demand for new cars became better than it was last year, and the season has been a decided success. Many dealers, however, find themselves with an over-supply.

New Stewart Speedometer Branches—The Stewart & Clark Mfg. Co., of Chicago, is opening two additional branch offices, one in Kansas City at 1825 Grand avenue under the direction of Harry E. Weber. The other branch will be at Indianapolis, 514 North Capitol avenue under the management of L. L. Banford. The purpose of these branches is to take care of business in those two cities. Business in outlying territories will still be taken care of from Chicago.

Forse Company Reorganized—The Forse Mfg. Co. has been reorganized, and has decided to move its factory from Anderson to Pendleton, Ind., where it will occupy the old plant of the Motsinger Device Co., which recently moved to Lafayette. The Forse company manufactures speedometers, and the reorganized concern has been incorporated with an authorized capitalization of $25,000. Directors and principal stockholders are W. H. Forse, Jr., R. M. Allen and Linfield Myers.

Overland Salesmen Meet—The traveling representatives of the Willys-Overland Co., enjoyed a banquet at the Secor hotel, Toledo, Thursday evening, when next year's business and the new models were informally discussed. There also was a discussion of last season's work and an interchange of ideas relative to the coming year. G. W. Bennett, general sales manager, presided. The policies of another year were considered in talks by Mr. Bennett, Assistant Sales Managers T. C. Whitcomb, C. C. Jameson and Clarence George. Sales Manager Stevens, of the Garford Co., was also a guest.

SHIPPING PLATFORM AT MOON FACTORY IN ST. LOUIS

Wolfe Hands in Resignation—Maurice Wolfe, general manager of the Clark Motor Car Co., of Shelbyville, Ind., has resigned his position with the Clark company.

Derr Oliver Sales Manager—Charles P. Derr, long with the Auburn Automobile Co., of Auburn, Ind., and later with the Standard Foundry Co., of Detroit, has accepted the position of sales manager of the Oliver Motor Car Co., of Detroit.

Vacation at Newcastle Plant—On July 15 the Newcastle, Ind., plant of the Maxwell-Briscoe Motor Co. closed down for 2 weeks, giving 2,500 employes a summer vacation. During the shut-down an invoice will be taken and necessary repairs made. When the plant reopens the manufacture of cars for the 1912 season will be started.

In New Building—The Racine Motor and Auto Co. of Racine, Wis., recently incorporated, has commenced work on a factory building on State street in Racine. It will be two stories high, with the first floor underground and the second, or first floor proper, of unusual height. A garage will be conducted.

Baltimore Winton Branch Moves—The Winton Motor Car Co. opened its new salesrooms in Baltimore Saturday, and in honor of the occasion, open house will be held all this week. A feature of the opening was the exhibition of the new 1912 model of the Winton six. The new salesrooms are located at Mount Royal and North avenues.

Free Installation of Shock Absorbers—A recent development in the accessory field is the free installation of this extra equipment on the cars. This policy has been adopted by the Connecticut Shock Absorber Co. of Meriden, Conn., which has established free installation stations throughout the country in which purchasers can have the shock absorbers put on the cars without charge.

Test of Welch-Detroit—James T. Shaw, treasurer of General Motors Co., is back in Detroit, after a 2-weeks' tour in which he gave the company's new Welch-Detroit car a thorough test. The Welch-Detroit factory at Detroit has done little during the two seasons of its existence, but is now receiving the direct attention of the General Motors heads in Detroit, and will be made a prominent factor in the company's 1912 campaign.

Another Bus Line—Some months ago the Greenfield and Maxwell Auto Traction Co. began motor car service between those two cities. So successful has the project proven that the service has been extended to Fountaintown, incidentally forming a connecting link between the Indianapolis, Newcastle and Toledo Traction Co., the Terre Haute, Indianapolis and Eastern Traction Co., and the Indianapolis and Cincinnati Traction Company.

Brief Business

CHICAGO—The Halladay Motor Car Co. is removing to its new store at 2029 Michigan avenue.

Helenville, Wis.—The warehouse of Reul Brothers, agents for the Buick, Ford and other lines, was damaged $6,500 by fire caused by lightning.

Charlotte, Mich.—Burger & Losee, who conduct a garage here, have moved into their new home, the R. A. Carber building on East Lawrence avenue.

Newark, N. J.—The contract for the erection of a one-story brick factory for the Newark Automobile Mfg. Co., in Bigelow street, has been let.

Morgantown, W. Va.— A. R. Olterman has rented the big rink building below Twelfth street in Monongahela, Pa., and is preparing to open a repair shop.

Indianapolis, Ind.—The Stewart & Clark Mfg. Co., of Chicago, has opened an Indianapolis branch. L. L. Banford, Indiana representative, will be in charge of the new establishment.

Milwaukee, Wis.—John E. Nelson haa purchased an interest in the Wisconsin Ford agency of Hickman-Lauson-Diener Co., Milwaukee, and will be active in the management and selling end of the business.

Milwaukee, Wis.—John Tellier and William Brooks have established a garage and repair shop at 219-221 Ninth street. It will be known as the Club garage, being in close proximity to the famous Deutscher Club at Grand avenue and Ninth street.

Kenosha, Wis.—George Braithwaite, factory manager of the Stevens-Duryea Co., Chicopee Falls, Mass., has resigned to accept the position of superintendent of the machine shops of the Thomas B. Jeffery Co., Rambler manufacturer, Kenosha, Wis.

Columbus, O.—The Columbus Vulcanizing and Supply Co. has changed its name to the Capital Supply and Mfg. Co. A. I. Fishbaugh, who has been manager, has taken H. Leadbetter into the firm, which is located at 180 South Pearl street, and does a tire repairing and supply business.

Madison, Wis.—The interest of Charles F. Spooner, superintendent of the Hokanson Automobile Co., has been purchased by Rudolph and Emil Hokanson and George P. Miller, the other stockholders. Mr. Spooner will take a long rest. The concern is the largest agency in Wisconsin outside of Milwaukee, it is claimed.

Cincinnati, Ohio—The Ohio Motor Car Co. has placed its agency for Maryland and the District of Columbia with Gilbert C. Densiger, Washington, D. C. Sumter, S. C., is to be the headquarters for the state agency for the Ohio car. The Ohio Sales Agency of South Carolina is the name of the firm, and J. M. Harby is president of the company. The new office of the company is to be located at the corner of Liberty and Sumter streets.

Wichita, Kan.—The Western Supply and Specialty Co. has opened for business at 127 North Market street.

Topeka, Kan.—J. E. Wilson has sold his share in the Capital Automobile Co. to his partner, A. B. Kirkpatrick, who will conduct the business alone from now on.

Beloit, Wis.—James Menhall has been appointed distributor of the Liberty-Brush cars in southern Wisconsin and has contracted for 250 of the little cars. Milwaukee will be the distributing base.

Wautoma, Wis.—Guy Bruce, of Spring Lake, Wis., has moved his repair shop to Wautoma, Wis. The shop has been enlarged and much new equipment has been installed in the new quarters.

Akron, O.—Wade G. Short has begun suit in the court of common pleas in Akron, O., to dissolve the partnership known as the Rubber City Auto Garage Co., in which Earl C. Sprankle is associated with Short.

Pontiac, Mich.—G. J. Batzer, formerly superintendent of the Rapid Motor Vehicle Co., has opened a new place on Water street, known as the Economy garage. He purchased the paint shop of J. Van Horn and remodeled it to suit the needs of his new business.

Indianapolis, Ind.—Empire agencies established within the last week are as follows: C. Arthur Benjamin, Syracuse, N. Y.; Interstate Motor Sales Co., Memphis, Tenn.; G. F. Shumway, Taylorville, Ill.; Hub Mfg. Co., Jonesboro, Ark.; Sargent, Langdon & Johnson, Niagara Falls, N. Y.

Rochester, N. Y.—The firm of Clum & Atkinson, brass founders, is dissolved, Philip A. Clum withdrawing from the partnership and George Atkinson succeeding to the business. Mr. Atkinson assumes all of the liabilities of the firm and all accounts owing to the firm are payable to him. The business will be continued as heretofore.

Pittsburg, Pa.—The Union Auto Specialties Co., which started in a small way 2 years ago to manufacture windshields at Baum and Beatty streets, East End, has secured the property of the defunct Twyford Auto Car Co. at Brookville, Pa., which consists of 10 acres of fine manufacturing sites and a two-story building, 65 by 200 feet. The Union Auto Specialties Co. reorganized very recently, and will have a capital of $75,000. Its officers are C. W. Vey, president, and H. W. Smith, secretary-treasurer. Its Brookville plant will employ fifty men.

Kansas City, Mo.—L. B. Sanders, district manager for the Brush Runabout Co., is now in charge of the local branch.

Cincinnati, O.—The Cadillac Motor Sales Co., now in temporary quarters on Reading road, this city, will soon occupy a new location on Seventh avenue.

Watertown, Wis.—Emil Zimmerling, formerly associated with Tuschen Brothers' garage and repair shop, has opened a livery and repair shop at 217 Third street.

Detroit, Mich.—P. W. Doyle has severed his connection with the Long Mfg. Co., and August 1 joins the sales department of the Timken Roller-Bearing Co., of Canton, O., and the Timken Detroit Axle Co., of Detroit.

Menasha, Wis.—Phillip Heup has purchased the garage and agency business of the Menasha Automobile Co., succeeding Rudolph Felch. Walter Hines will continue as superintendent. Mr. Felch intends to re-establish in business at Green Bay or Neenah, Wis.

Boston, Mass.—The Everitt, which has been handled by the American Motor Car Co., that recently went out of business, has been taken on by J. S. Harrington. The latter has taken the entire New England territory for the Everitt. Mr. Harrington will make Boston his headquarters.

New York—Charles E. Rickerson has leased for a client a plot fronting 65 feet on Eighth avenue and 95 feet on St. John's place, Brooklyn, for a term of 10 years to the Packard Motor Car Co., which will erect a one-story building on the site for its own occupancy.

Cincinnati, O.—L. E. Miller has leased to Edward Ungclas of the Ungclas Automobile Co., the southeast corner lot fronting 126 feet on Mitchell avenue, next to the Somerfield apartment house. The lessee will erect a two-story fireproof garage at a cost of about $15,000. Ungclas will have the agency for the Ohio Electric Motor Car Co.

Los Angeles, Cal.—Norman W. Church has turned over to the United States Motor Co. his contract, made with the Dayton Motor Car Co., which still has 4 years to run, and the retail interests of the Stoddard-Dayton Motor Car Co., in Los Angeles and San Francisco. This latter corporation is owned by F. W. Flint, Jr., and N. W. Church. Immediately upon closing the deal, Church returned to Los Angeles and announced that August 1 will mark his temporary retirement from the motor car industry. His territory was the

Announcements

entire Pacific coast and the eastern corporation will take charge almost immediately.

Pittsfield, Mass.—Elenzer Williams, a retired capitalist, has closed for the Velie agency in Pittsfield for Berkshire county.

South Haven, Mich.—John Mackey & Son have opened a motor car department in connection with their hardware and sporting goods departments.

Chippewa Falls, Wis.—Frank Lowater has been appointed agent for the Parry line in a large northwestern Wisconsin territory. He also will represent the Metz.

Sharon, Pa.—W. M. Layton is arranging to build one of the finest garages in western Pennsylvania at 51 South Main street. It will have 4,500 square feet of floor space and will be two stories high.

Toledo, O.—H. W. Schoenleib has succeeded George Woods, who has been in charge of the Goodrich tire depot since its establishment in Toledo several months ago. Mr. Schoenleib is an experienced man in this line.

Appleton, Wis.—The Walter Auto Co., on College avenue, has been sold by Henry Walter to Elmer Blake, of Appleton, and A. J. Schroeger, of Detroit. The company represents the Staver-Chicago, Overland, Clark and Warren-Detroit cars and operates a large garage.

Los Angeles, Cal—The Auto Motor Equipment Co., branch agent for the Remy Electric Co., of Anderson, Ind., maker of Remy ignition and lighting magnetos, has announced a regular service department has been established in its offices by the Remy company, which is in charge of Warren Bundy.

Des Moines, Ia.—A. W. Eggertson, for several years representative of the Auto Supply Co., Chicago, in this territory, has resigned to take a position as representative of the Locomobile company for Iowa and Minnesota. The Iowa Auto and Supply Co. has the local agency for the Locomobile.

Youngstown, O.—The Elton Automobile and Repair Co. has been re-organized with the following officers: G. A. Doeright, president; C. Domhoff, secretary-treasurer; Albert Elton, vice-president. These three officers, together with L. A. Manchester and Ed Turner, Jr., comprise the board of directors.

Pittsburg, Pa.—The Penn Motor Co., of Pittsburg, in which Albert G. Breitwieser, the lumberman, is largely interested, is pending negotiations for a site in McKeesport, Pa. It is likely, however, now to locate its plant in some other city, as its proposition was not accepted by the McKeesport chamber of commerce. The concern is capitalized for $150,000, with $75,000 paid in, and desires the town where it locates to underwrite a bond issue of $100,000.

Kenosha, Wis.—Achen & Hensel has been dissolved by mutual consent and the business will be continued by F. W. B. Achen.

Sheboygan, Wis.—The Rummele Auto Co. is working on a large addition to its garage, 40 by 50 feet in size. The addition will be devoted exclusively to repair work.

New York—H. D. Ward, for several years in the auditing department of the New York branch of the Quaker Oats Co., has been appointed auditor of the E. R. Thomas Motor Branch Co., New York.

New York—W. A. Sellon has severed his connection with the sales department of the E. R. Thomas Motor Co., New York, and has joined the sales department of C. R. Teaboldt & Co. He will concentrate on the Everitt line.

Chicago—George W. Stephens, formerly manager of the American Tire and Rubber Co., of Chicago, and formerly advertising manager for the G & J Tire Co., of Indianapolis, has been appointed manager of the Chicago branch of the Federal Rubber Mfg. Co., of Cudahy, Wis.

Pittsburg, Pa.—The Packers Truck Co., of which Albert Schenk of Wheeling is president, has changed from a non-resident to a resident corporation. It was incorporated at Pittsburg some time ago with a capital of $100,000, but will now have its principal office and works at Warwood, a suburb of Wheeling, W. Va. It also has increased its capital from $100,000 to $300,000.

Indianapolis, Ind.—George R. Emerson, of Guatemala, Central America, has secured the agency for the Marmon car in Guatemala City.

Boston, Mass.—The Whitten-Gilmore Co., agent for the Chalmers and Hudson cars, also the Dayton truck, has now added the Federal truck to its line.

Chicago—M. Zucker, formerly with the Auto Specialty Co., of Kansas City, now is identified with the Automobile Supplies Co., at 1335 Michigan avenue.

New York—Adolph Lewisohn will build a two-story garage, 121.8 by 79, on the southeast corner of Audubon avenue and One Hundred and Fifty-eighth street. The cost is $22,000.

Indianapolis, Ind.—A. J. Rogers, formerly with the Indianapolis News, has joined the advertising department of the Remy Electric Co., of Anderson, Ind., as assistant advertising manager.

Boston, Mass.—The Inter-State branch has taken possession of its new service department. It is located across the river in Cambridge and is within 5 minutes ride of the salesrooms on Massachusetts avenue.

Corliss, Wis.—Cornelius T. Myers, formerly assistant secretary-treasurer of the Wisconsin Engine Co., of Corliss, Wis., has resigned to become identified with the executive organization of the General Motors Co. at Detroit.

New York—W. K. Hadley has been appointed sales manager of Charles E. Riess & Co., general eastern distributers of the Marion cars. Mr. Hadley formerly was eastern sales manager for the Marion Sales Co., Indianapolis, Ind.

Indianapolis, Ind.—The White Motor Car Co. has opened a factory sales branch at 510 and 512 North Delaware street, succeeding the agency held for many years by the Hearsey-Willis Co. C. E. Lucore is general manager and F. A. Masters sales manager of the branch.

Indianapolis, Ind. — The Indianapolis Motor Car Co. has taken the Indianapolis agency for the Mais truck, which is manufactured in that city. The Indianapolis Motor Car Co. was the first concern in Indianapolis to handle motor commercial vehicles exclusively.

Cincinnati, O.—Significant of the growing importance of motor car business interests in Cincinnati is the purchase by the Oskamp company for the purpose of property on the northwest corner of Race street and Eighth avenue. The company proposes to utilize the site for the purpose of erecting a suitable headquarters for its motor supply department.

Recent Incorporations

Chicago, Ill.—Lyda Garage Co., capital stock $5,000; to maintain a garage; incorporators G. R. Whomes, A. Henning, L. W. Whomes and R. G. Whomes.

Marinette, Wis.—Northern Ignition Co., capital stock $25,000; incorporators Myron R. Churchill, J. E. Baum and H. C. Baker.

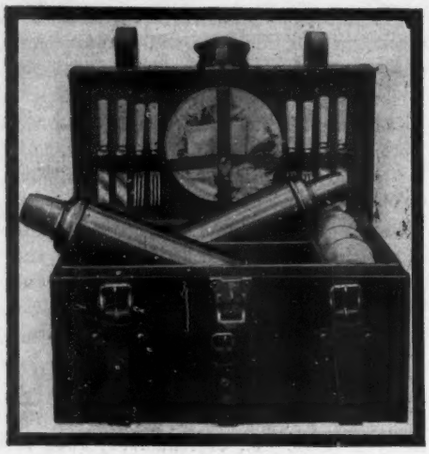
Pittsburg, Pa.—Senator Motor Car Co., capital stock $200,000; incorporators Percy T. Coburn, Augustus F. Schmidt, John Vetter, George C. Campbell and Howard A. Young.

Pendleton, Ind.—Forse Mfg. Co., capital stock $25,000; to manufacture motor car accessories; incorporators W. H. Forse, Jr., R. M. Allen, Linfield Myers, Fred Lantz, D. B. Cole and Austin Retherford.

Chicago, Ill.—Edison Storage Battery Garage Co., capital stock $5,000; maintain garage; incorporators W. C. Anderson, Wilson Critzer and Frank E. Price.

Chicago, Ill.—Chicago Motor Transportation Co., capital $100,000; general motor car and livery business; incorporators H. H. Nolan, Arthur B. Haven and Peter Sinclair.

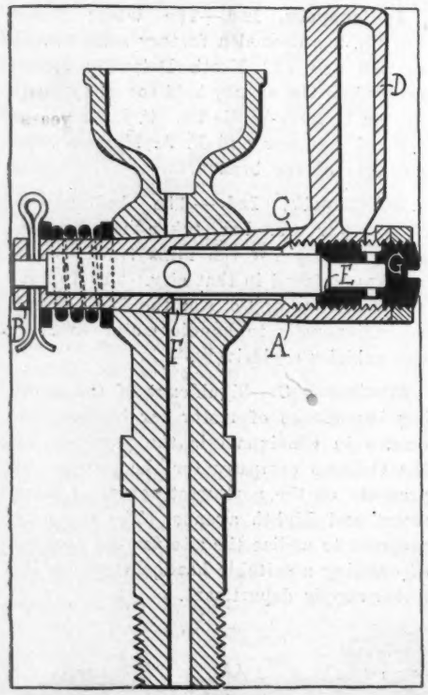
Development Briefs



SIMPLEX LUNCH TRUNK FOR LONG TRIPS

THE Simplex Vacuum Mfg. Co. of Newark, N. J., is making a new lunch kit in three sizes, with half-pint, pint and quart Simplex bottles, metal lunch box with removable cover and neat leatherette carrying case holding lunch for one, two, three or four people on short motor trips. This outfit will give the party a lunch from the home kitchen. The bottles are guaranteed to keep liquids hot 30 hours and cold 80 hours.

For those who desire to go on a more extensive trip a trunk outfit is offered which is made of very neat black enamel duck with leather corners. It contains two 1-quart nickel japanned Simplex bottles with indestructible lunch kit of four knives, four forks, four cups and saucers, and four napkins, with ample space under the tray for food for a 2-day trip.



SICO OVERHEAT ALARM WHICH WHISTLES WHEN MOTOR GETS HOT

Hartford Tire Pump

A power pump for the inflation of tires and designed to be driven from the flywheel of the engine is marketed under the name of the Hartford tire pump by C. S. Knowles of Boston. The pump is of the single-cylinder reciprocating type, the piston getting its motion through a 4 to 1 back gearing from a crank on the shaft of a friction wheel which is pressed against the flywheel.

The cylinder of the pump has a bore of 1½ inches and a 2¾-inch stroke. In attaching the pump, it can be set or hung vertically or horizontally at any angle to the frame so long as the friction wheel is in line with the flywheel of the engine, and stands normally about ½ inch away from it. It is thrown into operation by turning the thumbscrew shown in the illustration.

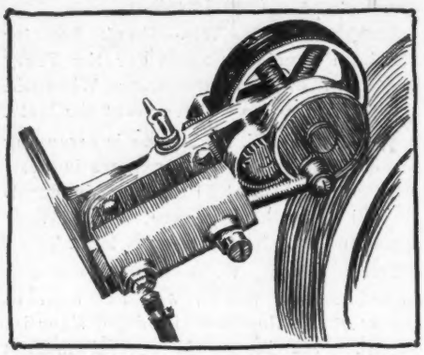
Special Rope for Motorists

The manifold uses of a stout rope in emergencies has become so generally recognized that a specially prepared rope for motorists is brought out by Asch & Co. of New York. This is called Motorope and is said to be much stronger than ordinary rope of the same size and weight. It is equipped with a galvanized hook secured by a strong splice. It comes in two sizes, one ½-inch in diameter, and 30 feet long, for light cars, and the other is 40 feet in length and ¾-inch in diameter, for heavier cars. An addition to this line of ropes is a block-and-tackle outfit consisting of 110 feet of rope with single and double blocks.

Sico Overheat Alarm

The Sico overheat alarm is a device resembling an ordinary petcock, which is threaded into the cylinder head and in addition to being used for priming cup purposes has the added advantage of being a sensitive thermostat to prevent overheating of the motor. As illustrated, C is a steel rod passing horizontally through the brass valve spindle at B; E is the valve seat for the supplementary steel valve and D is the whistle. The usual spring and split pin are employed to keep the valve in engagement in its seat.

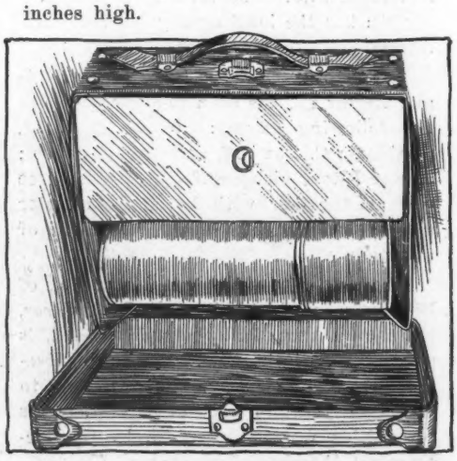
Normally the handle is set in a vertical position so the valve may be closed as usual while the motor is running. When the motor heats up beyond a safe running temperature, the brass valve spindle A will expand and elongate at a quicker rate than the steel pin, slightly opening the valve C so that, although the brass valve is still closed, the hot gases now will enter the by-pass hole F, thence pass through the valve C and escape into the whistle, causing it to give mild blasts which can easily be heard by the driver of the car. The plug G can be adjusted for giving the overheat alarm at any desired temperature while it will also take up any possible wear. Should it be desired to stop the whistling effect until the motor has been attended to and cooled again, the handle D may be swung over a slight angle, thus closing the by-pass hole F. When it is desired to open the cock as usual for the purpose of testing the explosion as well as for priming the cylinders with gasoline, handle D is thrown over in a horizontal position in the usual way. This device is put on the market by the Shore Instrument and Mfg. Co., New York.



HARTFORD POWER TIRE PUMP DRIVEN BY FLYWHEEL

Vac-Jac Magnum

The Vacuum Insulating Co., of Chicago, is making the Vac-Jac magnum vacuum bottle for motoring use. It has a removable glass bottle, and the feature is that there is no glass under atmospheric pressure. The insert, in which liquids or solids are held, is a straight glass bottle with a screw top. The vacuum is permanently retained in the metal case, which is 15 inches high.



SIMPLEX LUNCH KIT WITH CARRYING CASE